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Amateur Radio

THE MAGAZINE FOR AUSTRALIAN RADIO AMATEURS

WIRELESS INSTITUTE OF AUSTRALIA

FORAY to FAURE...

DX Chasers Club FAURE ISLAND DXpedition 2008

Wheelchairs are NOT barriers to assessment

A loading/tuning coil for 137 kHz antennas

Drew Diamond VK3XU

ISSN 0002-6859

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Our Cover this month

The West Australian DX Chasers Club (DXCC) voyaged to the little known and never before activated wildlife preserve Faure Island (IOTA OC-206) in Shark Bay about 900 km north of Perth. Overcoming cyclonic weather and flies, they made many contacts and also had time to assist with resarch into indigenous fauna. Read about it on page 27.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

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Representing

The Australian Amateur Radio Service

Member of the
International Amateur Radio Union

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Editorial comment

Club advertising in AR

Many Clubs have come to expect that an advertisement can be placed in AR, at no cost to the Club. Some Clubs seem to expect that an advertisement can be run for several issues. Other Clubs, especially those running large events, may wish to purchase space for their promotional material. Several Clubs request loose-leaf inserts to be printed and included with the magazine prior to posting.

The preparation and inclusion of such material has a cost which is predominantly hidden in the cost of producing AR. The situation is slightly different for inserts, where Clubs currently do pay for the printing of the inserts.

Both PubCom and the Board are sympathetic to the needs of Clubs, and we feel that we should provide some clarity on the situation. Accordingly, PubCom plans to recommend a final draft "Club Advertising Policy" at its November meeting. The recommendation will then be forwarded to the Board for approval. Once approved, the policy will be circulated to all affiliated clubs and posted to the WIA website.

I believe that most members of the WIA would agree that running an advertisement of a reasonable size once per year at no cost to a Club is a reasonable provision. The Policy will clearly indicate what Clubs can expect – the maximum size, the frequency of placement, preparation costs and so on.

PubCom intends that the policy will come into effect as of the January/February 2009 issue of AR.

Those pesky faux pas

We all make mistakes occasionally, for we are all human. When one is busy, you sometimes do not check things as thoroughly as you should. Mea culpa!

I think that most readers will clearly see one example of me missing something that should not have been missed: look at the Inside Back Cover of the October issue of AR – the captions of the two lower photographs should be swapped. Yes, I made an error when sending off the material and then we missed it at proofing! Sorry folks.

And then on page 16 of October AR, We failed to recognise that the schematic (Figure 4) was not large enough to ensure that it would reproduce adequately when printed. The schematics have been available for download on the AR website since I became aware of the fault – see the October 2008 issue page.

We have been striving to improve our preparation and proofing processes and will continue to do so. But remember, we are all human!

Office move

The WIA office will be moving later this month. Details are included elsewhere in this issue and the WIA website will be updated at the appropriate time. The new premises are in Bayswater – I am told that the location is not far from "The Toy Shop" – as a well known retail amateur radio equipment outlet is fondly referred to by many amateurs in Melbourne.

I am sure that the new venue will greatly improve the circumstances for the WIA staff and volunteers. The plans include the operation of WIA Bookshop sales from the office. But more detail will come at a later time. I hope to be able to provide a story on the new premises, including some photos, in a future issue – probably our January/February issue, given that the move will occur when December AR will be in the final stages of preparation.

73
Peter VK3KAI

ar

WIA comment

Michael Owen VK3KI

The changes – now three years on

My "WIA Comment" in Amateur Radio a year ago was headed "The changes – two years on". I reviewed the effect of the changes to the Australian amateur licence structure, particularly the introduction of the Foundation licence, then two years earlier, in October 2005.

It is now three years on, and so it seems sensible to see what has happened in the last year and see whether there are any changes since then or any new issues that may need to be addressed.

The answer is "yes", there is some good news, and some issues that we should address.

An important question is whether there has been an increase or decrease in the total number of amateur licences in Australia, a very relevant question given the trends in some countries. A valid broad generalisation is that in many countries the number of amateurs has been dropping, as has the membership of the national amateur radio society.

I looked at that question a year ago.

After discussing the number of people we had qualified for the Foundation licence, I pointed out that one effect of the introduction of the new entry-level licence had been the reversal of the trend of ever reducing amateur licence numbers in Australia.

On 30 June 2001, there were 15,017 amateur licences current in Australia, including repeater and beacon licences as well as people who held more than one callsign. By 30 June 2005, that number had dropped to 14,041. By 30 June 2006 the number had started to increase, then to 14,475. On 3 September 2007, the date of the ACMA data used for the 2008 Call Book, the total number of amateur licences current in Australia had risen to 15,326, and by 1 October 2008, the date of the ACMA data used for the 2009 Call Book, the total number of amateur licences current in Australia had risen again, to 15,469.

In short, the introduction of the entry level licence continues to reverse the trend of ever decreasing amateur licence numbers.

A year ago we published a graph showing the Foundation licence exam candidates by age group, looking at some 1,500 people who had been qualified from March 2006 to the end of September 2007.

That graph showed the middle to higher age group as the largest group, but I also commented that the number of younger Australians undertaking the entry-level examinations was increasing. I stressed the importance of that age group because they will be the area where career choices will be made, and the Foundation licence may be a factor in these choices.

This year we have compared the age group of Foundation candidates in the year ending 30 September 2008 with the age group of Foundation candidates in the year ending 30 September 2007.

Let me set out each age group with the number of candidates in the year just passed, compared with the number the year before, shown in brackets.

8 to 15 years, 60 (95)
16 to 25 years, 100 (92)
26 to 35 years, 224 (135)
36 to 45 years, 126 (198)
46 to 55 years, 128 (160)
56 to 65 years, 34 (160)
65 to 90 years, 43 (79)

That is probably the most significant of all the information we have, as it shows clearly a shift to a younger age group of Foundation qualification candidates.

That is really good news.

Also very interesting is analysis of Foundation qualification assessments by state, comparing the number in the year ending 30 September 2008 with the number the previous year (in brackets).

New South Wales, ACT	188 (283)
Victoria	207 (315)
Queensland	117 (145)
South Australia	63 (91)
Western Australia	55 (59)
Tasmania	21 (30)
Northern Territory	5 (8)

We compared those figures with the number of Standard and Advanced assessments, over the same periods.

New South Wales, ACT	123 (100)
Victoria	130 (111)
Queensland	72 (43)
South Australia	34 (34)
Western Australia	38 (48)
Tasmania	26 (8)
Northern Territory	4 (7)

Let me suggest a couple of conclusions that may be drawn from those figures.

First, the number of those undertaking Standard and Advanced assessments has increased, and we know that many of those are Foundation licensees upgrading. That is very encouraging, and should be an effective answer to those who doubted the wisdom of the entry level licence.

But there is a clear decline in the number of Foundation candidates. Let me tell you what this suggests to me.

When the Foundation licence was introduced, there was an immediate demand that was met over the first two years. These were the people who believed the Novice had become "too hard", very often CB operators. These were the people who, after May 2004, when the introduction of the Foundation licence was announced in the ACMA's Outcomes of the Review of the Amateur Regulation, waited until it was formally introduced in October a year later. These were the people who knew all about amateur radio and were encouraged by the new entry level licence to participate.

But now that pent up demand has been largely met.

I believe that our task must now change. We must now start promoting amateur radio, getting the message to people who do not know very much about it, particularly younger people.

We must now look to sailing groups, travelling groups, Scouts, schools and just the general population.

Perhaps the WIA can assist by making a "package" of material available for clubs in regional areas to use for their local radio station, or their local newspaper. Perhaps clubs will have to sell their weekend Foundation classes a little harder in their local community.

There is no answer that fits everywhere in Australia. I have just come back from a weekend in Perth, where I asked those questions of the WA Advisory Committee members and others.

I ask you to consider how to best promote amateur radio in your environment, and how the WIA can help you do that.

And, please, share your thoughts with us. **ar**

WIA News

Future Management of Amateur Call Signs

On 8 February 2008, ACMA announced that it would implement contractual arrangements with the WIA for the ongoing management of amateur examinations, the issue of certificates of proficiency and certain administrative functions associated with amateur call signs.

As part of these arrangements, on 5 September 2008 the WIA conducted a ballot for two letter call signs. All amateurs who participated in the Ballot were offered a two letter callsign. The ballot arrangements, including the WIA recommendations for specific two letter call signs to ACMA, will be concluded on 24 October 2008.

The WIA and ACMA are currently finalising the ongoing contractual arrangements. This process includes suitable cost recovery arrangements for amateur examinations, certificate issue and call sign administration. Once these arrangements have been finalised, the WIA will be responsible for providing recommendations to ACMA on the allocation of all amateur service call signs.

At this stage, it is expected that the ongoing contractual arrangements will be in place by the end of 2008. Until a commencement date for the new arrangements can be announced, however, neither ACMA nor the WIA will accept any applications for two letter callsigns in any states or territory. The issue of amateur licences with three and four letter call signs will not be affected.

Further announcements on the new arrangements, including information on the commencement date and the applicable charges for examinations, certificate issue and callsign administration, will be made before the end of 2008. These announcements will be made in WIA broadcasts and on the WIA and ACMA websites, and in the next *Amateur Radio* magazine.

WIA to move to new premises

The WIA Board has announced that it has leased new premises to replace its present premises in Balaclava Road, Caulfield North.

The present premises are too small, do not have the ordinary facilities that are necessary, and have totally inadequate storage space. So much so that the WIA is renting additional premises in Williamstown and East Burwood to store records, and books such as the Foundation Manual.

After an exhaustive search, the WIA has leased premises in Bayswater, in an industrial estate. Details of the address are published elsewhere in this issue.

Some painting and cabling, and other work is required before the office is actually moved, but it is hoped that the new premises will be fully occupied during the second half of November.

"We hope that the lease of these premises will give us urgently needed breathing space to plan a longer term solution to our requirements" said WIA President, Michael Owen VK3KI.

WIA Submission on Spectrum Plan

Before the changes made at the ITU's WRC 07 can be implemented, and in particular the new secondary allocation to amateurs of the segment 135.7 – 137.8 kHz can be made available in Australia, the statutory Australian Radiofrequency Spectrum Plan must be amended.

ACMA has published draft amendments to the Spectrum Plan and invited comment.

In its submission, the WIA notes that apart from an experimental licence held by the Brisbane Amateur Radio Club, there was only one other user of the LF segment.

The WIA looked at the inefficiency of antennas that amateurs would be able to use at this part of the spectrum, and concludes that the risk of interference is very small.

The WIA noted that the New Zealand administration allows New Zealand amateurs a larger segment in this part of the spectrum (but on a temporary

continued on page 20

WIA IS MOVING

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the new location of the national office of the WIA will be

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A loading/tuning coil for 137 kHz antennas

Drew Diamond VK3XU

Doubtless the most significant and difficult challenge for the urban amateur intent on doing some low frequency (LF) transmission is the antenna problem. Few of us have access to a pair of 30 m masts spaced hundreds of metres apart, or a nearly ideal ground through the steel hull of a ship, for instance.

However, we are fortunate in this country as much good theoretical and practical LF work has already been published by Australian (References 1, 2 and 3), New Zealand, and European amateurs and experimenters. Indeed, the RSGB Handbook (Reference 4) has contained an LF chapter for the past few editions, where may be found details of the sort of equipment and techniques needed to radiate an effective LF signal from an ordinary suburban location. Much of what follows is derived from these sources.

A back-yard inverted-L or T antenna, worked against ground, or counterpoise, can only be a few percent of a wavelength long at LF, and so the radiator must operate far below its natural resonant frequency. We therefore require a large amount of inductive and/or capacitive loading in order to present a resistive load to the transmitter. Such electrically small antennas are very inefficient, typically 0.2%. Never-the-less, our UK, European and NZ colleagues have achieved good results from home stations.

The usual 'standing-wave' concept of understanding HF antennas cannot readily be applied to an extremely short radiator at LF. It is conjectured that vertically polarised radiation is produced by the combined electric field established between the top wire and ground, and the displacement current* between the top wire and ground. The voltage on the wire is almost equal along its length, whereas the current will be maximal at the feed point, falling to zero at the far end(s) of the wire.

To find the amount of loading inductance required, the natural capacitance of the radiating wire is first determined. A workable 'rule of thumb' for estimating the total capacitance of

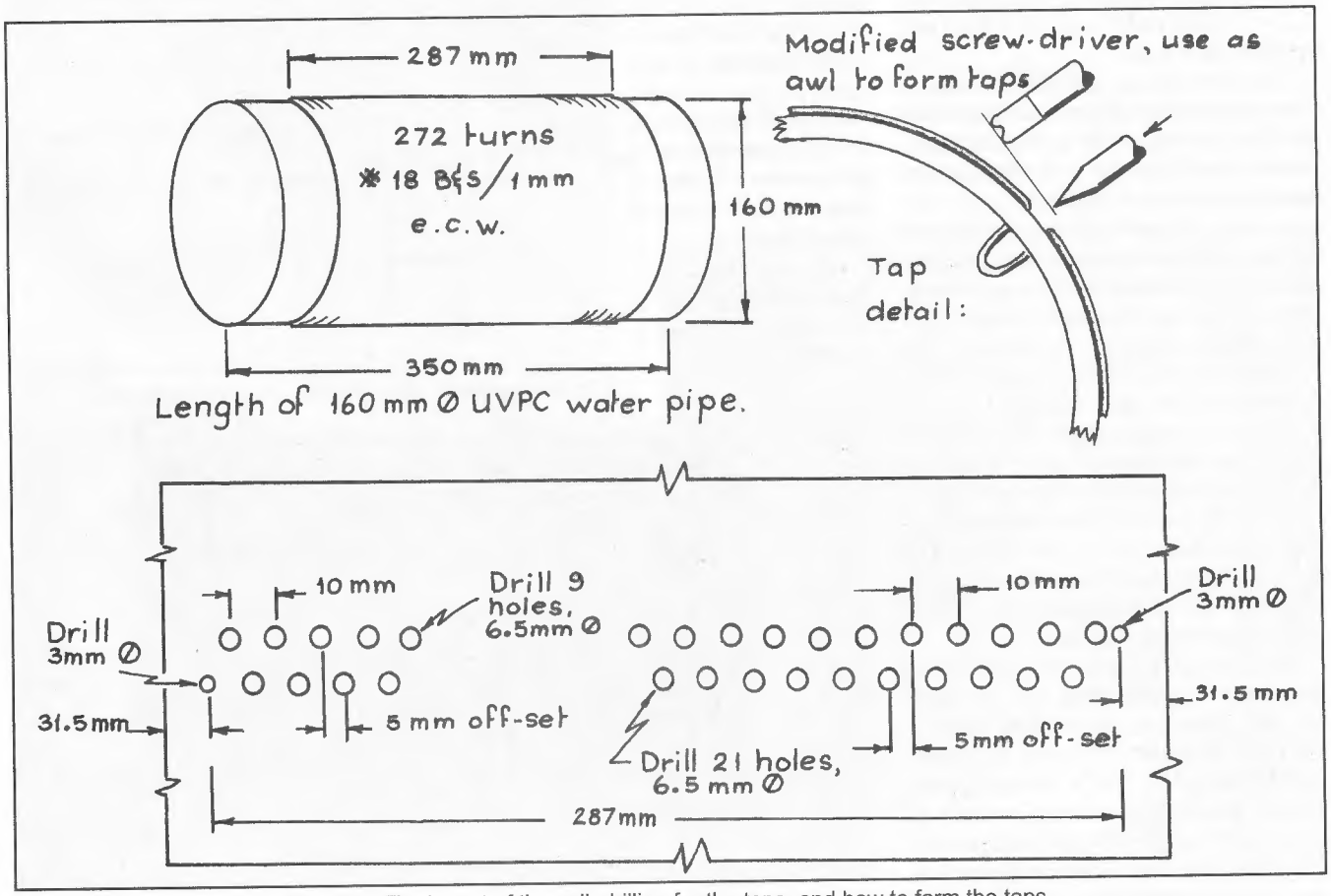

Figure 1: The layout of the coil, drilling for the taps, and how to form the taps.

the radiator (that I have found applies quite well) is given in Reference 4, which gives a figure of 6 pF per vertical metre, and 5 pF per horizontal metre of ordinary 7/.067 mm PVC covered electrical wire.

Next time you see an LF beacon antenna site: have a good look at the configuration. Notice that the horizontal top part of the T is (generally) composed of multiple wires that run out from the feed wire, these separated by spreaders of perhaps a few metres in length, thus significantly increasing the capacity of the antenna, thereby reducing the amount of loading inductance required.

It is quite possible that some amateurs may have enough space for an inverted L or T composed of, perhaps, 12 metres vertical and 42 m horizontal (total 54 m). The natural capacitance is estimated: 12 x 6 = 72 pF, and 42 x 5 = 210 pF. Total = 72 + 210 = 282 pF. We therefore need to 'tune' our 282 pF with an appropriate amount of loading inductance in order to bring the system into resonance at (say) 137 kHz.

$L = 25330/(fMHz^2 \times C)$ (Ref. 5)

where L = inductance in uH, C = capacitance in pF.

$L = 25330/(0.137^2 \times 282) = 4785.7$ µH, rounded to 4.8 mH.

To allow for any changes in antenna capacitance, it is a good plan to make the loading coil (or helix) rather larger than calculated, so I shall describe construction of a 5.2 mH coil.

A study of practical coils constructed by our overseas colleagues (and here, see Reference 3) makes fascinating reading. Some specimens, using edge-wound copper strip, or large diameter Litz wire, are truly legendary. Big is good. And bigger is better. Just where do we draw the line?

Let me try an example. The 5.2 mH tapped coil shown in Photo 1 is wound with 1 mm enamelled copper wire (ecw.) upon a 350 mm length of ordinary 160 mm diameter UVPC pipe. Measured Q at 137 kHz is 280 - pretty much as expected. Its RF resistance at 137 kHz is therefore about 16 ohms.

Assuming an optimistic radiation resistance of 0.05 ohm, and an earth ground resistance of 10 ohms (0.05 + 16 + 10 ohms, all effectively in series - see Reference 2), 100 W of input power should produce an antenna current of about 1.96 A (192 mW radiated power). Now, if a second coil of larger dimensions and thicker wire with a Q of 560 (0.05 + 8 + 10 ohms) were substituted, then current should rise to 2.35 A (276 mW radiated), where, for the same input power level, the radiated signal would increase by about 1.6 dB.

Coil

My aim in this instance was to make an acceptably efficient coil of reasonable dimensions using readily available materials and tools. 160 mm white UVPC storm water pipe is quite good electrically, easily machinable, and obtainable in short lengths from Bunnings. 1 mm ecw is a common wire size used by transformer makers, armature winders and other electrical trades. And ordinary round 1 mm wire is easily 'workable', so that tapping points may be readily made during the winding process.

The oft quoted, and quite accurate Wheeler's (metricated) formula for finding the inductance of a single-layer solenoid coil is:

$L = (d^2 \times n^2) / (457.2d + 1016l)$ (Reference 4, pA 3)

where L is in µH, d = diameter in mm, n = number of turns, and l = coil winding length in mm.

My coil has 272 turns, winding length 287 mm, 160 mm diameter.

Substituting: $L = (160^2 \times 272^2) / [(457.2 \times 160) + (1016 \times 287)]$

= 5192 µH, rounded to 5.2 mH.

The measured inductance at 1, 137 and 250 kHz agree very closely with this result.

Method

A suggested way of winding the coil is pictured in Photo 2. The wire spool is supported upon a wood frame with a length of round timber (e.g. part of an old broom handle) passed through the spool's centre. The frame is clamped upon the 'work-mate' saw bench with two G clamps (not visible, behind the bracing panel of the frame).

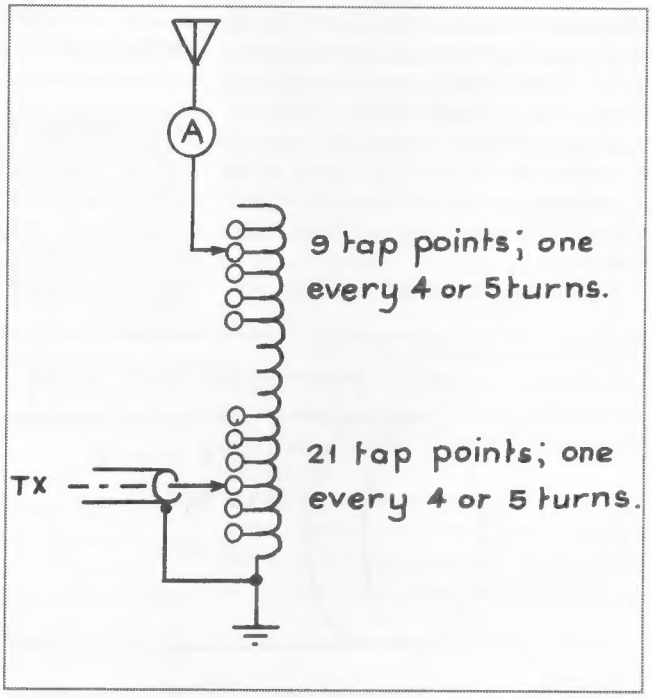

Fig. 2: A suggested configuration for using the loading/tuning coil.

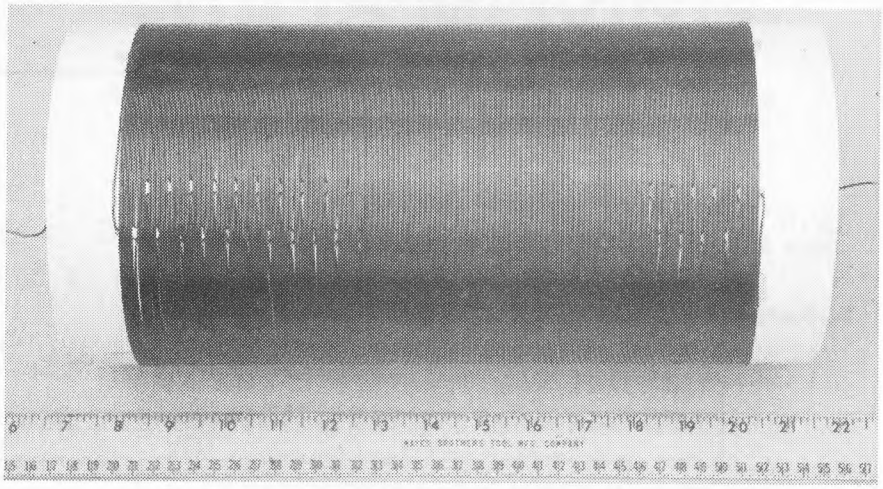

Photo 1: The completed loading/tuning coil for 137 kHz.

To prevent damage to the winding, two strips of carpet should be fixed upon the bench leaves with masking tape, as shown. The coil former may now be placed upon the leaves, and the coil wound on, as depicted in Photo 2.

The length of wire required in metres may be estimated by (pi x d x n) / 1000 which substitutes to (3.142 x 160 x 272) / 1000 = 136.7 m, which is then rounded up to 140 m to allow for tails, taps and errors. Self fluxing ecw should be used if available.

Taps are formed by carefully pressing the wire into the 6.5 mm holes, stagger spaced 5 mm, pre-drilled in the former, as shown in Figure 1 (the drawing is a guide only, actual dimensions are not critical - add extra taps if required). A useful tool, or awl, for the job may be made from an old screw-driver. A smooth U-shaped notch should be filed in the blade so that the wire is formed into a loop as the awl is pushed into the hole with just sufficient travel to form a solderable tap, as shown in Figure 1 and Photo 3.

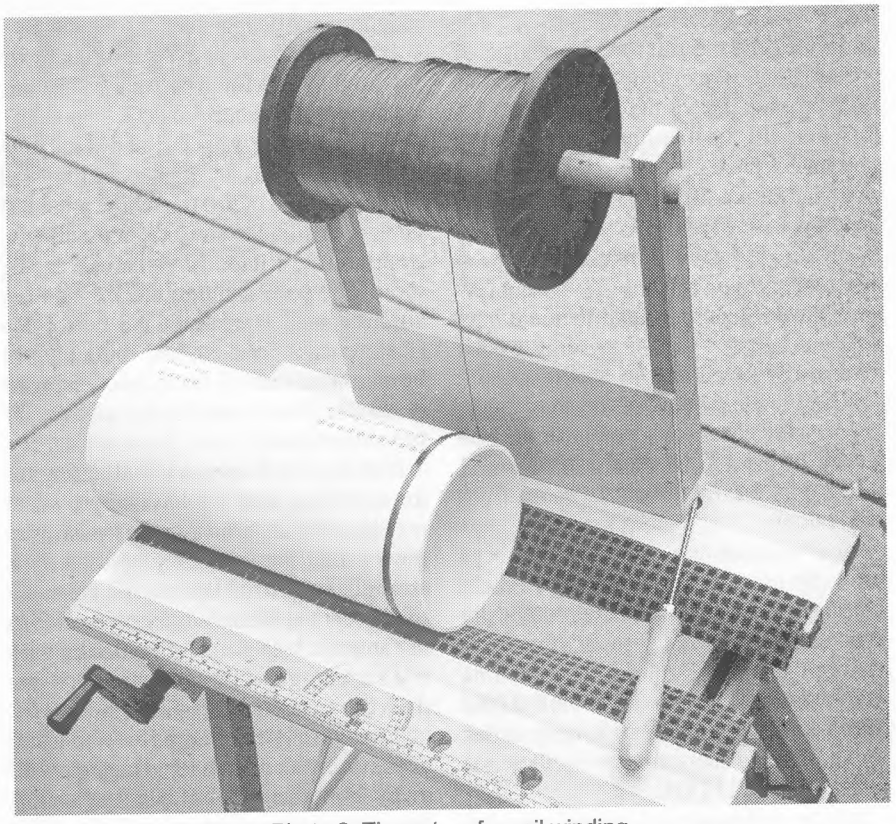

Photo 2: The set up for coil winding.

One handy benefit of making internal tapping points in this manner is that the coil is prevented from unspooling at each tap, so the worker can take a break at regular intervals, as needed (except, of course, for the 'long haul' in the middle section of the coil).

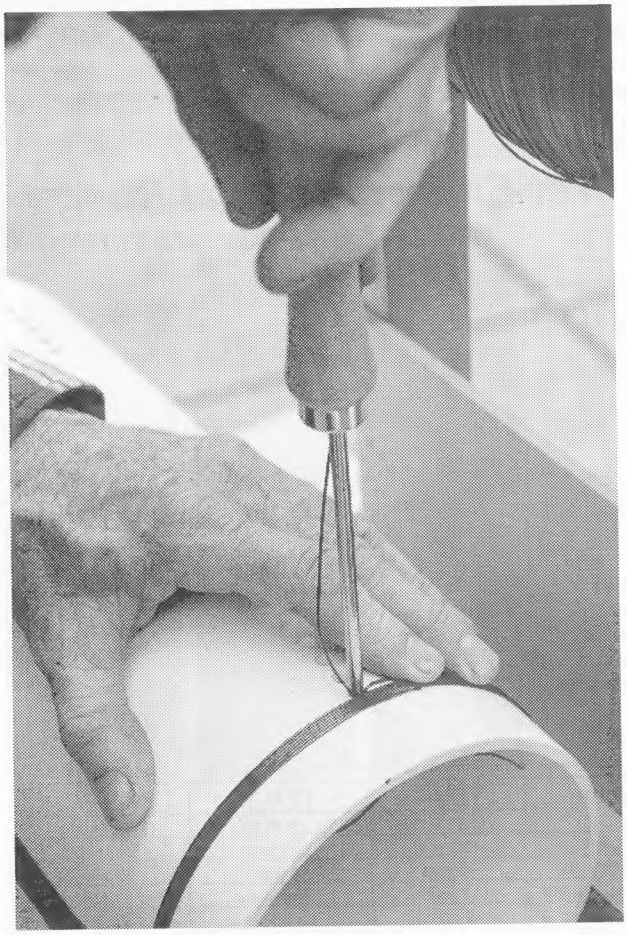

Photo 3: Forming a coil tap.

Operation

A suggested configuration is shown in Figure 2. It would be prudent to initially adjust the coil inductance for resonance, and find the 50 ohm connection point

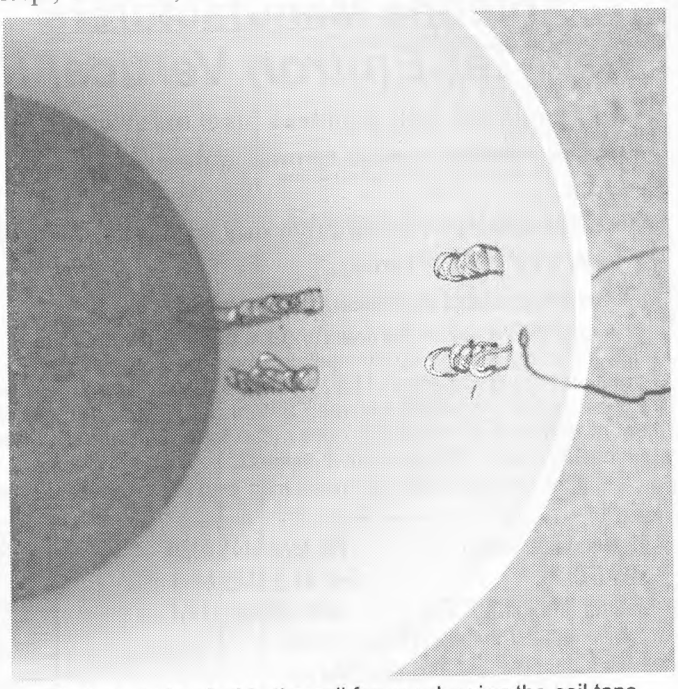

Photo 4: A view inside the coil former showing the coil taps.

using a small-signal test set-up. For example, the RF resistance bridge of Reference 6 works well at 137 kHz, as no doubt other patterns do too.

When the coil inductance and the antenna capacitance are resonated, and matched into a 50 ohm signal source, a (perhaps surprisingly) high RF potential is obtained at the top of the coil, even when energizing the antenna with a few milliwatts. So an initial adjustment may be done using a signal generator (that covers 137 kHz), and an oscilloscope.

Using a suitable length of coax cable, connect the generator's output to the coil in lieu of the TX, as shown in Figure 2, initially about one quarter way up from the bottom.

Now position the oscilloscope's X10 probe tip near the top of the coil (loosely capacitively coupled, but not physically connected). Sweep the generator's frequency through 137 kHz, altering the antenna connection near the top end of the coil, and the coax connection near the bottom, so that the amplitude displayed on the oscilloscope peaks at about 137 kHz.

At the milliwatt power level, we can put our hands inside the coil and alter the connections with no risk of burning fingers! These two adjustments interact, so some juggling may be required.

If found necessary, the coil may be inverted to provide more tapping points at the top of the coil.

When doing these adjustments, we soon realise that the high potential end of the coil (and hence the whole antenna) is very sensitive to stray capacity effects, such as one's hand anywhere near the top of the coil, which confirms that the antenna insulators must be first class (References 7 and 8), and there should be a minimum of dielectric material (example tree limbs) in the vicinity of the antenna wire.

Having thus found an initial setting for the taps (and that we have approval to use the new LF band), some transmitter power may be cautiously applied. It is strongly suggested that an RF ammeter of appropriate sensitivity be connected in the antenna lead as an aid to final tuning and matching - "its amps up the stick that does the trick".

Always cut carrier before making adjustments, and keep fingers well away from the coil and antenna lead. A fluorescent tube or neon lamp should be permanently installed near the 'hot' end of the coil, whose glow will warn people to keep clear.

References and Further Reading

1. http://member.melbpc.org.au/~jadcock/
2. http://users.tpg.com.au/ldbutler/
3. "Experimental Stations on 196 kHz 1531 m"; J Adcock VK3ACA, Amateur Radio, July 1984.
4. Radio Communication Handbook; RSGB, 8th edition.
5. Any older edition of the ARRL Handbook; e.g. 1966 edition, p 542.
6. "An RF Resistance Bridge"; Diamond, Amateur Radio, July 1999.
7. "How long is a piece of wire"; J Wiseman, Wireless World, April 1985, pp 24, 25.
8. "Anybody seen our ship?"; J Wiseman, Nautical Review, May 1979.

*James Clerk Maxwell stated in 1865 that any change in the electric flux in any region is equivalent to an electric current in that region, and he called this a displacement current, to distinguish it from a conventional conduction current. This displacement current produces a magnetic field exactly as if it had been produced by a conduction current (Reference: Electrical Technology; E Hughes, 4th edition, p 171. See also: The Man Who Changed Everything - The Life of James Clerk Maxwell; B Mahon, published by Wiley, pp 106, 125-6, 178).

Photos: Andrew Diamond

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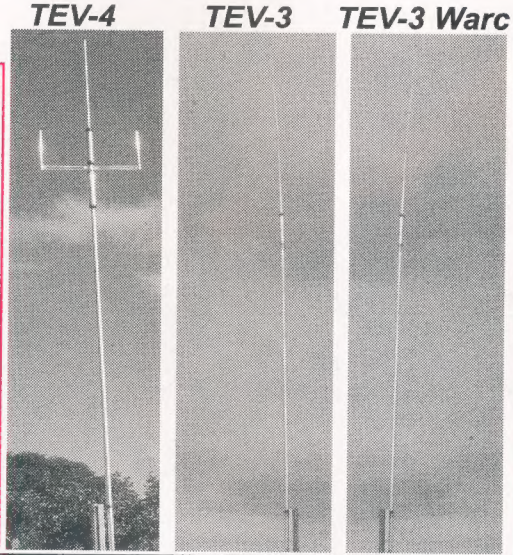

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Email: rawmar@hotkey.net.au

Antenna	TEV-4	TEV-3	TEV-3 Warc
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 18, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

Antenna Tuners – How we Tested

John Morrissey VK3ZRX

In the March 2008 issue of AR, I described my impressions of the Palstar AT1KP antenna tuning unit (ATU), and how I found the tuner to be a useful addition to the ham shack.

However apart from a brief mention of a test where I proved the ATU could match a known 'nasty' load, I did not discuss the range of objective testing done on the tuner, or the equipment used to do the testing. Yet another aspect was – how could I be confident that my test equipment itself was not telling me fibs?

In this article I will discuss the tests done on this tuner (and on others), the test setups and equipment used, and how I verified the test equipment itself.

The objective testing covered three main areas. These were:

- the ability of the tuner to match a variety of known (complex) loads
- the ability of the tuner to match a particularly 'nasty' load
- the efficiency of the tuner when matching the 'nasty' load.

Loads, impedance transformation, and all that

Creating the known loads was a bit of a challenge. It is pretty simple to make up a few known resistive loads, covering up to (say) a few hundred ohms and hence with known VSWR when fed from a 50 ohm source. However antennas are not noted for being cooperative by offering a pure resistance to the feed line! Hence, I also needed some known reactive loads, and in turn this meant I would need a different set of component values for each band I wished to test (assuming, of course, that I wished to use a similar value of reactance on each band). By this stage, the requirement for a reasonable range of test loads, across a representative range of frequencies, was looking impracticable simply due to the number of loads required.

However, there is another way, by using impedance transformation. It is well known that a quarter wave section of transmission line can be used to match one impedance to another, as shown in Figure 1. The formula used to calculate the impedance of the required matching section is in every ARRL Handbook and will not be repeated here.

By rearranging this formula a little, we can calculate the impedance transformation by a quarter wave section of 50 ohm line:

$$Z_{IN} = \frac{Z_0^2}{Z_L}$$

or alternatively

$$\frac{Z_{IN}}{Z_0} = \frac{Z_0}{Z_L}$$

where:
Z0 is the line impedance (50 ohms)
ZL is the load impedance

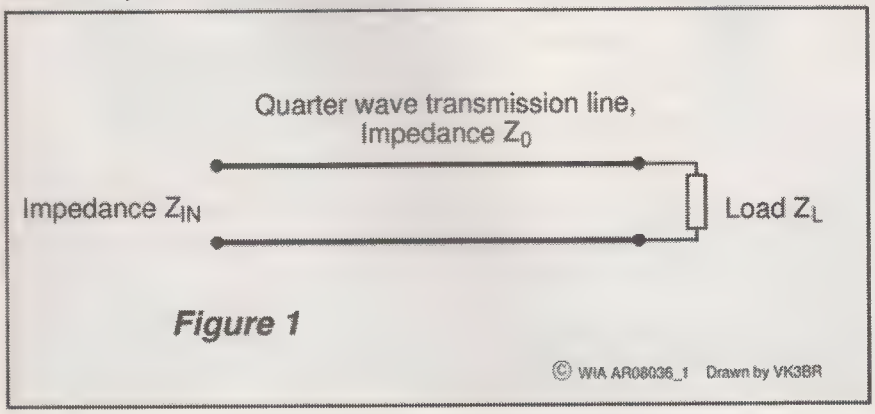

Figure 1: A quarter wave transmission line.

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23 cm 36 ele slot fed yagi all brass	$249
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40—80 metre vertical NEW	$330
10/11 beams comp opt 5 ele	$399
10/11 5/8 vert 4 rad 1/4 wave	$224
Tri band HB 35 C 10/15/20 m	$844
3 ele 20 m beam, 4.8 m boom	$514
3 ele 20 m medium duty boom	$409
Log periodic 7 ele 13-30, 6, 5 m boom	$813
NEW 160 m Vertical SUBURBAN	$355
M B Vert auto switch 10/80 m	$345
40 m linear loaded 2 ele 6.4 boom	$574
5 ele 20 mtr beam 40 foot boom	$995
6 m 8 ele 12 dBd gain	$408
Top loaded 160 m vert	$474
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Z_{IN} is the impedance at the input to the quarter wave section.

The second version tells us something very useful: *the ratio of the load impedance to the line impedance at one end of the quarter wave line, is the same as the ratio of the line impedance to the transformed impedance at the other. That is, the VSWR is the same at one end as at the other*, but the impedance is different.

To take a specific example: suppose the load is 200 ohms, giving us a VSWR of 4:1 (equals 200 ÷ 50). Through a quarter wave 50 ohm line, this will transform to an impedance of 12.5 ohms – still with a VSWR of 4:1 (equals 50 ÷ 12.5). Hence, using a quarter wave section, we can easily transform a test impedance to another value with the same VSWR, therefore doubling the range of load impedances we can test. Can we extend this to other values again? Yes, we can.

Of course, other line lengths will transform the impedance at one end of the line to a different value at the other. In general this will be complex (that is, both resistive and reactive) – transformation from one resistive load to another with a quarter wave line is a special case of the more general impedance transformation with an arbitrary length line. However computation of the transformed impedance for anything other than a multiple of a quarter wave line section involves use of some heavy-duty maths or use of a Smith chart, which is a useful graphical tool to solve various transmission line problems.

For those who want to go the mathematical route, the "Transmission Line Equation" is included in the ARRL Antenna Handbook; however using it requires manipulation of complex numbers and is best done using a computer. Microsoft Excel (with the Analysis Toolpak add-in enabled) is suitable, if a little clumsy. Use of a Smith chart is also explained in the ARRL Antenna Handbook.

Incidentally, complex impedance transformation, using transmission lines of specific length and impedance to obtain the transformation required, is often used in commercial VHF and UHF power amplifiers, especially in older generation solid-state rigs.

So, where have we got to? We have found that given a known load (say 200 ohms) with a known SWR (4:1 in this case) we can transform this to a range of other impedances of the same VSWR using various lengths of transmission line. The transformed impedances can include purely resistive and also complex (combination of resistive and reactive) loads.

In practice, I have known resistive loads of 200, 300 and 400 ohms, allowing testing up to a VSWR of 8:1. I also have a selection of known transmission lines which I can use to transform these to other impedances. The next question is, how do I know the length, and hence the impedance transformation, of these lines?

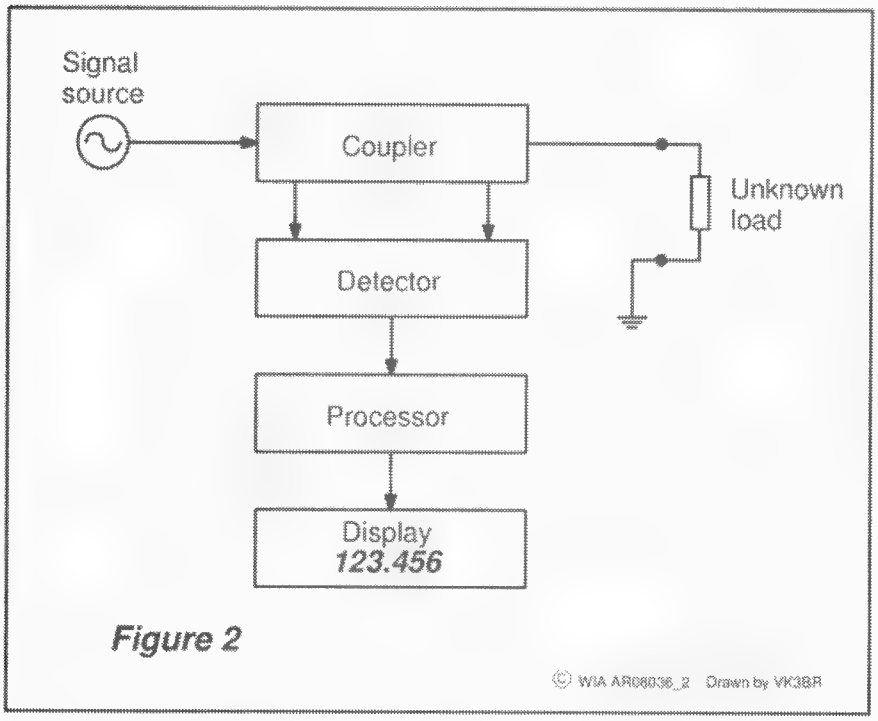

Figure 2: The block diagram of a typical antenna analyser.

Line length measurement

An obvious way to cut a cable to length is to calculate the required length from wavelength and the cable velocity factor, measure, and chop.

However this is not very accurate; although the cable impedance is usually held to within a reasonably close tolerance of 50 ohms (or whatever the nominal cable impedance may be), the velocity factor (that is, the ratio of the propagation velocity in the cable compared to free space) can vary quite significantly. Instead, we need to be able to cut the cable to a given electrical length, so that the velocity factor does not need to be known.

The easiest way to cut a length of transmission line to an accurate electrical length is to use an antenna analyser. I use a slightly different method; however it is based on the same principles, so it is worth having a look at how an antenna analyser works and how it can be used to cut cables to a given length.

The block diagram of a typical antenna analyser is shown in Figure 2. Not much to it, really. What we have is a signal source of some sort (for example, an oscillator) which supplies a RF signal to a circuit I have called the coupler. The coupler in turn feeds the test terminals of the analyser, where you connect the antenna or whatever load you wish to analyse.

The coupler also has some other outputs, which depend in detail on the design of the coupler. These are used to sense things such as the RF input level to the coupler, maybe the VSWR, and other data. These signals pass to the detectors (which may be part of the coupler assembly) and then the outputs of the detectors pass to the processor where some maths is applied to calculate the information displayed on the screen of the analyser.

For an excellent description of how an antenna analyser works in more detail, I refer you to the articles by Jim Tregellas VK5JST.

It will be evident that the coupler is a

key component of the analyser, and the performance of the whole analyser is pretty much dependant on the coupler. Various designs can be used, such as variants of a Wheatstone bridge like a directional bridge or return loss bridge, or a directional coupler. More information on these various forms of coupler is available from a variety of sources.

To use the analyser to cut a cable to a quarter wavelength is simple. With the test terminal open circuit, note the analyser reading (resistance and reactance) at the frequency of interest – the reactance should be zero. Attach the cable to the analyser and trim the length until you again have the same reactance reading.

The principle used here is that a true quarter wave stub, open circuit at the far end, presents a low impedance at the near end with zero reactance. (Theoretically, the impedance is zero, however cable losses result in a small value). This is probably the most accurate way to cut a stub; using a dip meter can introduce some inaccuracy due to the inductance of the coupling loop.

In my case, I do not have an antenna analyser, but I do have its big brother, a Hewlett Packard 8405A Vector Voltmeter (Photo 1). As a matter of interest, the 8405A dates back over 40 years, and is the grandfather of the various HP vector network analysers (VNAs), with the first being the 8410A in 1968. The VNAs launched an RF engineering revolution in the 1970s which really took off when the VNA was combined with substantial computing power in the 8510A, removing much of the drudgery of RF measurements and opening up a whole new vista for RF designers and developers. The revolution continues to this day. However, we digress.

The 8405A enables RF level measurements on two channels, and most importantly can measure the phase angle difference between the two channels – hence its name of Vector Voltmeter. From the level and phase angle measurements using various couplers to the circuit under test, many circuit and transmission line parameters can be calculated. The means to do this is outside the scope of this article; the commercially available antenna analysers usually adopt a simplified method of measurement and calculation.

For a signal source, I use a Wavetek 3001 signal generator, and I use various forms of coupler depending on the application. For this measurement I used a calibrated homebrew HF directional coupler, shown in Photo 2. Calibrated?! How????

It turns out that a coupler can be fully error corrected with three correction terms, which (unfortunately) are complex numbers. The means of determining and applying the corrections is again outside the scope of this article; it suffices that full error correction is possible, and the same technique can also be used for antenna analysers provided the sign (positive or negative) of the reactance reading can be determined.

All that is required is to take a measurement with an open circuit termination, a short circuit termination, and a known good (very low SWR) 50 ohm termination, and then crunch the maths. Incidentally, unless the error vectors (which require both magnitude and phase) are known, this error correction is not possible. This requirement rules out, for example, using error correction for a typical VSWR meter, which only provides scalar readings – measurement of magnitude without the vital phase measurement. Oh, well.

With the vector voltmeter and with the error-corrected directional coupler, I can be confident that the measurements I make on transmission lines are, in fact, reasonably accurate.

The nasty load.....

One possible use of an ATU is to tune a short whip. This might be needed for a field day, for example. So, could the test ATU tune a short whip without arcing over or other distress, at a reasonable power level (say 100 watts)?

First, I needed a reproducible model of a whip. I decided that a 2.7 m (9 ft) whip would be a good example to use. But what is the base impedance of a 2.7 m whip on, say, the 80 metre band (3.6 MHz)?

Searching the ARRL Antenna Handbook, chapter 16 turned up a couple of different ways to calculate the base impedance of a short vertical monopole, which is of course what the whip is. Fortunately the different methods gave close to the same answer; about 0.4 ohms in series with about 22 pF. (Now you know why a short whip is so hard to match

Photo 1: The HP 8405A vector voltmeter.

on 80 metres, and why its efficiency is so low…..)

However the base impedance is not the whole story. In series with the base impedance are the various losses; mainly ground loss and leakage loss, plus the resistive loss of the antenna itself.

For our purposes I ignored leakage and resistive losses, and assumed a value of about 1.8 ohms for ground losses – probably very optimistic, but bringing the total load impedance to 2.2 ohms – a convenient value given I had a number of 2.2 ohm power film resistors which I could connect in series parallel to give this value with low parasitic inductance and capacitance.

The reactance was a bit more tricky. This capacitor must withstand substantial RF current (about seven amps to give 100 watts into two ohms) and also a high RF voltage. No capacitor I had could withstand these conditions, so how to make one?

The answer was to make a capacitor out of a piece of Teflon insulated coax I had in the junk box. Measured on my RLC bridge, it had a value of 21.0 pF – pretty good for our purposes.

Connected in series with the 2.2 ohm load, this made up my model of a short whip, so I could test the ATU under reproducible conditions. To measure the power delivered to the load, I could measure the RF voltage developed across the known resistive load of 2.2 ohms, which was connected at the 'earthy' end of the circuit. So – now we had our 'nasty' load. Next challenge – power measurement.

Power (although not for the people)

RF power measurement. Easy. Hook up your favourite power/SWR meter and take a reading. Right? Not really.

In fact accurate RF power measurement is quite difficult. Many cheaper RF wattmeters have no accuracy specification at all, with the better ones rated at 10%. Even the Bird type 43, widely accepted as in the 'Rolls Royce' category, is only rated to measure RF power within 5%. So what is so hard?

Consider some of the pitfalls:

- meters which measure RF voltage. Fine so long as the transmission line impedance at that point happens to be an accurate 50 ohms, non reactive. Anything else, and the meter could read almost anything.
- meters based on directional couplers. What is the performance of the coupler? Its coupling factor? Its directivity?
- meters based on power absorption. How good a match is the load, that is, how much of the incident power is simply reflected? If it is a thermal meter, how much power is absorbed in parts of the meter where it is not measured?
- meters using attenuators. What is the performance and accuracy of the attenuator?
- what is the linearity of the detector? If a diode, has the "turn-on' voltage been allowed for?
- even given all the above, how well has the meter itself been calibrated? And against what?
- and so on.

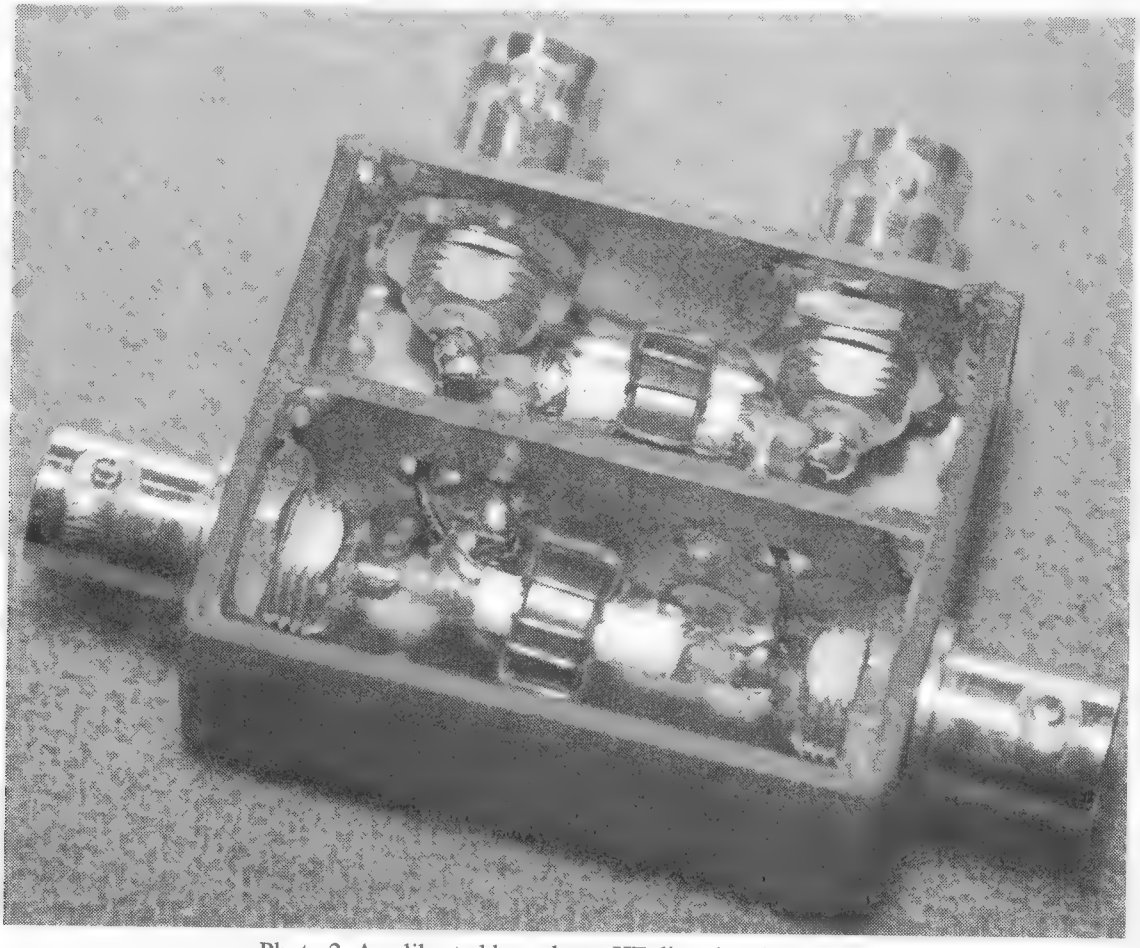

Photo 2: A calibrated homebrew HF directional coupler.

For a more detailed discussion of the complexities and pitfalls involved, refer to the excellent Hewlett Packard application notes on the topic, which are easily found on the Net.

For getting an idea of the efficiency of the antenna tuners, I used a combination of techniques. For convenience, I used a simple directional-coupler based Revex power meter to measure the input power to the tuner.

This has previously been checked against my calibrated directional coupler and a HP 432A

power meter, and provided adequate resolution for the task. In turn, the 432A had been checked against a Siemens thermal microwave power meter which (unlike the HP meters) can be calibrated at DC. Finally, my DC meter is checked against a much more accurate HP DVM which is NATA certified, so I have reasonable confidence that the power measurement calibrations are as close as I can make them.

For measuring the output power from the ATU, a normal RF power meter could not be used as the impedance is not 50 ohms. Instead I used a HP 410C voltmeter, which has a unique AC probe with rated performance up to several hundred MHz.

Again the calibration of this meter is traceable, and together with the known resistance of the load, constituted a good basis for power measurements using the RF voltage developed across the load. Some of the instruments involved in all of this are shown in Photo 3.

Finally, I did not try to do an absolute measure of the efficiency of the tuner. This would involve trying to find a small difference (the losses) between two large values (the input and output powers), and is particularly prone to error. Instead, I measured the power output from a known reasonable ATU, and compared this (for the same input power) with the power output from the ATU under test. As noted in the article, the test ATU had significantly lower losses – sufficient to demonstrate it had acceptable efficiency.

Conclusion

In this article we have really covered quite a lot of ground, although not in great detail. Consider what we have looked at:

- transformation of impedances, using firstly a quarter wave line;
- how a 50 ohm quarter wave line can be used to transform a load with a known VSWR, to another impedance with the same VSWR;
- how this also applies to an arbitrary length line;
- error correction for things like directional couplers;
- methods to accurately cut a transmission line to a particular electrical length;
- a quick look at the feedpoint impedance of a short vertical whip;
- how RF power measurement is full of traps for the unwary if any sort of accuracy is required;

and finally

- we also looked at some issues of calibration.

And all because we wanted to investigate the performance of an antenna tuner!

References

ARRL Antenna Handbook, 17th edition

Tregellas, Jim (VK5JST): An experimental HF aerial analyser, AR May 2005 p5

Tregellas, Jim (VK5JST): UHF aerial analysers, and Wheatstone's wonderful bridge, AR June 2006 p9

Agilent Technologies: Six Decades of Measurement Contributions

Agilent Technologies: Network Analyzer Basics. (In particular, pp43 – 44 regarding error correction).

Hewlett Packard: Application Note 64-1A, Fundamentals of RF and microwave power measurements. (Also other similar Notes, such as AN-64-1B, RF Power Measurement Basics, etc).

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Photo 3: The collection of 'other' instruments used in the preparation of the article.

A DC-DC converter

Dale Hughes VK1DSH

The need for this device came about due to battery problems during various field day campaigns; the radios worked much better when the supply voltage was higher than 13 V. During the course of an event, the battery voltage decreased and radio performance deteriorated. It became apparent that a stable supply voltage is critical for optimum operation of the radio equipment. It seemed that using a higher supply voltage and a suitable regulator would solve the problem and this design is the outcome of that idea.

The converter operates over an input voltage range of 20 to 30 V and delivers a stable 13.2 V output at a current of up to 20 A. The design uses a combination of switching and linear techniques to provide low RF noise operation with acceptable efficiency. The design is flexible and can be tailored to suit a range of output current capacities; and potentially, output voltages. The measured efficiency at 11 A load current is approximately 70 %. Photo 1 shows the completed converter.

The design is based upon a circuit idea shown in the data sheets of the Linear Technology LT1084CP-12 regulator (Reference 1) which is a fixed 12 V output regulator. (Note: a variable output voltage version also exists – the LT1084CP) The design described in this article uses an enhancement-mode FET for the switching pre-regulator, rather than a bipolar transistor as shown in the Linear Technology application note.

Circuit description

Battery voltage is applied to the unit via RF filtering, reverse polarity and overload protection components C1, D1 and F1. So that reasonable conversion efficiency might be achieved, the input supply is passed through a switching pre-regulator. Transistor Q1 is switched on or off depending on the voltage across the low dropout regulators (U3 through U5). The on-off switching occurs at a frequency of several kilohertz, depending on load current and supply voltage. When Q1 is switched on, the current flows into the reservoir capacitor C5 via L1 and the stored energy feeds the linear regulators. Minimal power is lost in the pre-regulator as Q1 operates as a switch and it dissipates very little power. The main loss in this part of the circuit appears to be resistive losses in L1 due to the high peak currents.

The voltage across the linear regulators is sensed by an opto-coupler (U2). When the voltage exceeds approximately 2 V, the opto-coupler output transistor turns on, which then turns Q1 off by removing the gate-source bias. The rapid on-off switching results in a relatively constant voltage across the linear regulators, just above their dropout voltage, so that power dissipation in them is kept to a minimum. Note that the selected regulators have a dropout voltage of less than 2 V and the combined voltage drop of the opto-coupler emitter and diode D4 is approximately the same as the regulator dropout voltage. As Q1 is an enhancement-mode device, a suitable bias supply is required to turn the device on. This is supplied by a small DC-DC converter, the output of which is divided down to generate the required gate voltage. During start-up, power to the DC-DC converter is supplied by a 7812 voltage regulator and as soon as the 13.2 V output is available, power to the DC-DC converter is provided by the main regulated output via diode D7. Regulator U1 then dissipates very little power as it is not supplying any output current. Resistor R10 isolates regulator U1 from the input supply and acts as a current limit in case of fault conditions.

The LT1084CP-12 linear regulators are paralleled, and balanced current sharing is ensured by using a low value resistor in the output of each regulator. In the prototype, I used a short length of resistance wire, similar to that available at local suppliers such as Dick Smith Electronics. The wire was cut to the length that yielded a resistance of 0.01 ohm and three of these were used as R7, R8 and R9 by soldering the wire across a section of tag-strip. The input wires to the three regulators were also cut to equal lengths, so that the resistance in the supply path was the same for each regulator. If only a single regulator is used these precautions are not required.

As the output of the regulators is actually 12 V, the converter output was increased by raising the reference pin above zero volts by using a 1.2 V reference diode (VR2), so that the output voltage became 13.2 V. Higher output voltages may be achieved by inserting

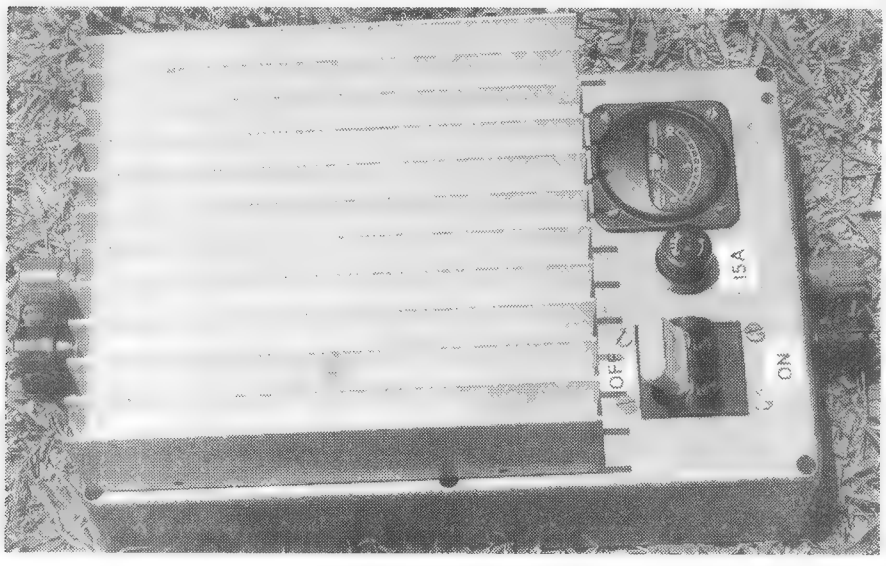

Photo 1: Completed converter

forward-biased diodes in series with the reference line, which will increase the output voltage in (approximately) 0.6 V steps (or the variable output version of the regulator could be used).

The LT1084CP-12 regulators used in this design include internal current limit resistors and protective diodes. No external protection diodes are required, unlike with other more common three-terminal regulators. Reference 1 gives more details on the use of these regulators.

Capacitors C6 and C7 ensure the regulators are stable and that RF does not get into the circuitry via the output. A 15 V Zener on the output provides some protection against transients. For minimum RF noise generation, capacitors C3 and C4 should be mounted as close as possible to Q1.

A convenient option for using the regulator in the field is a suppressed zero voltmeter. The circuit is a bridge which allows the meter to display voltages in the range of 20 to 30 V. One side of the meter is connected to a stable voltage provided by VR1, which is a 5.0 V reference device.

The other side of the meter takes an attenuated voltage sample from the input supply. The zero and span of the circuit can be adjusted so that the meter displays the desired range of voltages between 20 and 30 V. When the input voltage is less than 20 V, diode D2 will conduct and clamp the voltage across the meter to protect its movement from excessive negative excursion.

Conversion Efficiency

The conversion efficiency of the circuit was measured at a load current of 11 A over a range of input voltages. The output voltage did not deviate from 13.16 V over the range of input voltages and the maximum voltage drop from zero to maximum load was only 50 mV. Table 1, which shows the results of this test, also includes for comparison the maximum efficiency obtainable by using a linear regulator alone.

Components and construction

Many of the components can be changed to suit what the constructor has available. The switching FET (Q1) in this prototype unit is a BUZ12 device which is officially obsolete; however any device with similar specifications would be suitable. The specifications for the BUZ12 are shown in Table 2. A suitable replacement would appear to be an IRF1405N device from Jaycar (catalogue number ZT-2468), although it has not been tried in this circuit.

Inductor L1 was made from four 27 mm diameter toroids stacked end on, then taped together to make a long toroid (visible at the top of Photo 2). Then 35 turns of 0.91 mm wire was wound in the conventional toroidal manner, i.e. through the central hole and over the outside of the core stack, to make an inductance of approximately 700 microhenries.

The toroids were recovered from unserviceable computer power supplies and have a yellow painted body with a single white face. A similar part appears to be available from Jaycar (catalogue number LF-1276) except that the wires wound on the core would have to be removed before it could be used in this application.

The capacitors at the input side of the circuitry should have a voltage rating of at least 40 V so that they can cope with transient high voltages that may appear on the input supply. Capacitors on the output side should have a rating of at least 16 V. Diodes D3 and D7 are TO-220 packages with two Schottky diodes in each package. They are available from Jaycar (catalog number ZR-1039). Polarity protection diode D1 is also available from Jaycar (catalog number ZR-1024).

The DC-DC converter used in the prototype generated an output of 18 V and was recovered from junked equipment; but similar new devices are available from Farnell, Jaycar, etc. The main requirement is that its output supply is galvanically isolated from the input as the output has to be connected between the gate and source electrodes of Q1, which is sitting at approximately 15 V above earth. Different DC-DC

Input		Efficiency (%)	
Volts	Amps	Switched	Linear
20	10.3	70.1	65.7
21	10.1	68.0	62.6
22	9.7	67.6	59.7
23	9.4	66.8	57.1
24	9.1	66.1	54.8
25	8.8	65.6	52.6
26	8.5	65.3	50.5
27	8.2	65.2	48.7
28	8.0	64.4	46.9

Table 1: Test data Output = 13.6 V Load = 11 A

Maximum Device Ratings	
Drain – Source voltage	50 V
Continuous drain current	42 A
Pulsed drain current	168 A
Power dissipation	125 W

Table 2: Q1 - BUZ12 specifications

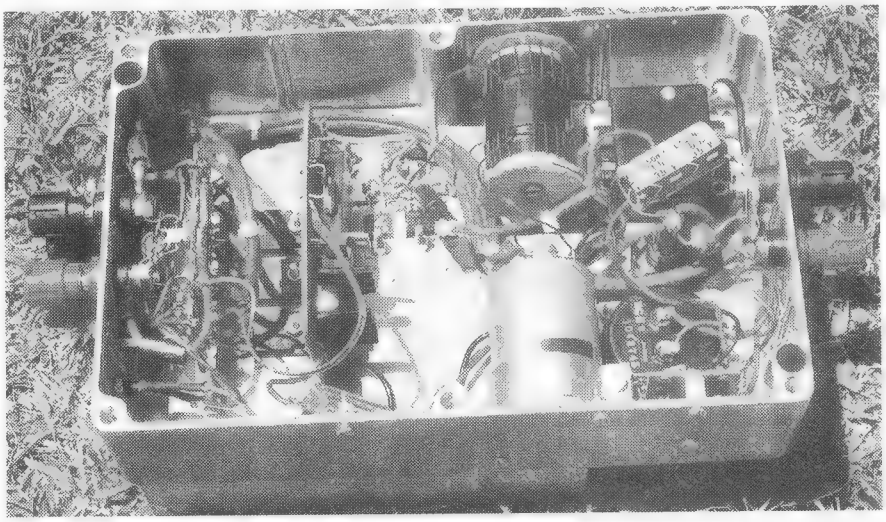

Photo 2: Internal view of converter

converters or FETs may require resistors R11 and R13 to be altered to suit the bias requirements of the switching transistor. The DC-DC converter does not need to supply much power so a small 1 W device will be more than adequate.

The LT1084CP-12 low dropout regulators are available from Farnell (catalog number 245938); however they are expensive if purchased from that supplier. The Australian agent for Linear Technology components is Soanar Pty Ltd, (Ph: 02 9432-7803); or the regulators can be purchased directly from Linear Technology using their on-line purchasing site at http://www.linear.com/

Alternatively, the variable version of the regulator (LT1084CP) could be used in place of the fixed regulators, so that a converter with variable output voltage could be built. WES Components http://www.wescomponents.com/ can supply the LT1084CT device, which is the TO-220 version of the variable regulator.

Note that the number of regulators can be changed to meet the current capability required by the user. None of the other components are critical or difficult to obtain and various substitutions should cause no difficulty.

The prototype unit was constructed in a die-cast box and a surplus heat-sink was screwed to the bottom of the box. Photos 1 and 2 show the general construction of the unit. The larger components were screwed directly to the inside of the box and the smaller components were mounted on Vero-board for convenience. The heavy lines shown on the schematic diagram (Figure 1) indicate that heavy-gauge connecting wire should be used and appropriate allowances for voltage drop and contact resistance should be made when the unit is constructed.

A number of ferrite beads (marked F.B. on the schematic) were used to further reduce any radio frequency emissions from the regulator circuitry. If suitable beads are not available, a few turns around a suitable toroidal core should suffice.

In use

The converter works very well, with no detectable RF emissions from HF through to UHF. Its ability to provide a stable, relatively high current while the input voltage varies is very useful in a wide variety of applications. There are no critical construction issues and the design can be modified to suit available parts and requirements. With the components shown, the circuit will provide a continuous output current of 15 A with a peak current capability in excess of 20 A.

With the addition of an appropriate transformer and rectifier, the circuit could form the basis of a useful mains-powered high-current power supply. An alternative use for the unit could be as the source of power for 12 V equipment in vehicles with 24 V electrical systems.

Acknowledgement

Thanks to Bill Maxwell VK7MX for his helpful suggestions during the writing of this article.

References

1. Linear Technology LT1083/LT1084/LT1085 low dropout positive fixed regulator datasheets. See http://www.linear.com/ for more details.

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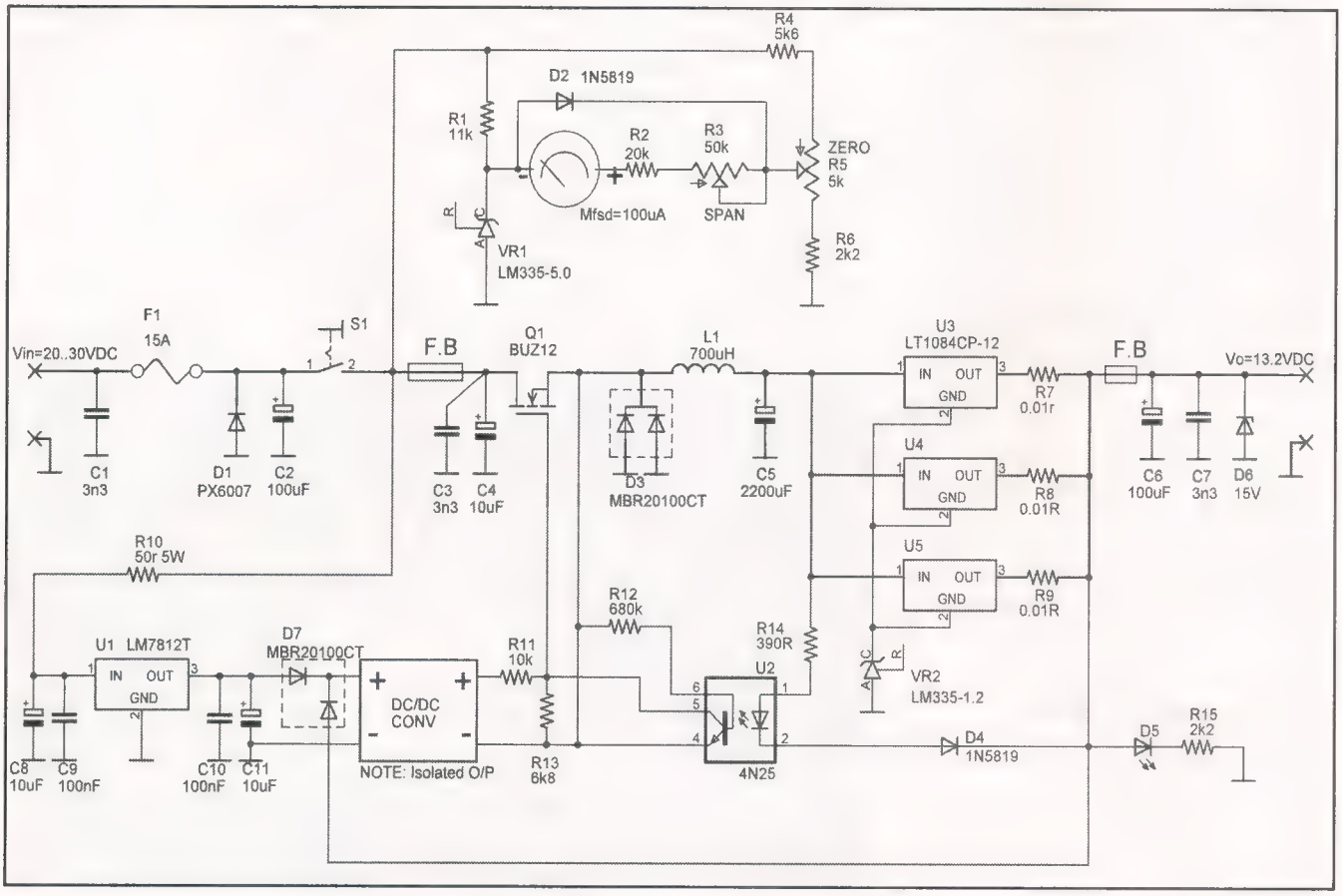

Figure 1: Converter circuit diagram

Wheelchairs are not barriers

Ian Gray VK2IGS Nominated Assessor

At the request of Fred Swainston, I took on the role of a Nominated Assessor, with all that entails. It was quite a surprise when my first task was not that of a remote assessment or of an assessor but it was to conduct a special assessment of a lass confined to a wheelchair by quadriplegia.

Our Club, Summerland Amateur Radio Club (SARC), was approached by Catherine Ryan earlier this year. Cathy has been a quadriplegic since birth. She had developed an interest in radio communications when assisting at the Ballina Communications and Rescue Centre at Light House Beach. Whilst there, the surf club captain happened to mention amateur radio to Cathy and she followed this suggestion through. Thus, earlier this year, Cathy came along to our club house and made herself known. The club members were intrigued by Cathy's ability to drive her car to the clubrooms, set up her wheelchair and wheel herself in to meet the members.

In discussion with Cathy, it was confirmed that she had been assisting at Ballina Communications and Rescue, and was, at some time, a member of Toastmasters where she met one of our club members, Duncan Raymont VK2DLR. Recently she has worked as a part time receptionist at a local law firm and would like work in radio communications.

Photo 1: Cathy VK2FCRW operating the Summerland ARC Kenwood TS-680S

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Our web site has full descriptions and we are a helpful telephone call away.
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Try these for just some of the top quality brand names that we represent:
TEN-TEC
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See you at MIENA Hamfest
Saturday 6th December

Cathy presented me with a medical certificate relating to her physical difficulties and this was forwarded to the WIA with a request for permission to conduct a special assessment. This permission was forthcoming. Luckily, I had, sometime last year, been the other end of a telephone remote special assessment conducted by Ron Bertrand VK2DQ, for one of our local club members. This was when I was an Assessor, and not a Nominated Assessor. Nevertheless, I contacted Ron and he passed on some valuable tips as to how I could approach Cathy's assessment. I then asked Duncan Raymont VK2DLR, one of our club Assessors, if he would assist in the assessment, to which he readily agreed.

SARC conducts weekend training courses for the Foundation licence every two months, on the even numbered months, with the theory and practical assessment training on the Saturday and the exam and practical assessment on the Sunday. Accordingly, Cathy attended one of our courses. As Cathy's case was going to be a departure from the norm, I decided to set aside an evening for the theory and practical assessments.

On the evening set aside, Cathy passed both her theory and practical assessments to the satisfaction of myself and Duncan. The paperwork was filled in except that Cathy did not, at that stage, apply for an operator's licence. This was done a few weeks later. Cathy applied for and gained the callsign VK2FCRW. Jokingly, she refers to the 'CRW' as 'Catherine Ryan Wheelie'.

In follow up discussions with Cathy, she has said that becoming an amateur will help her overcome some shyness and some minor speech difficulties. She also felt very nervous when making her first contact. My comment was, "Didn't we all!"

Photo 2: Cathy VK2FCRW and Ian VK2IGS

Cathy has set herself some impressive goals. Among them, she would like to gain useful employment in radio communications and she also lists buying her first dual band VHF/UHF transceiver, buying an HF set, passing her Standard licence and becoming a learning facilitator. I have no doubt that over a period of time Cathy will tackle these goals with the same determination that won her a Foundation licence.

Cathy has gained the friendship of all club members, who are impressed by her determination to overcome her physical challenges, but what gives me a big buzz is to hear Cathy VK2FCRW on air chatting away to other club members using her two metre HT over one of the club repeaters.

I wrote this article because I consider that amateur radio is not just for the physically able but holds a great interest for people who have a physical challenge in their lives. As amateurs we should be encouraging this segment of society to enrich their lives via amateur radio.

As a final point, Cathy informed me the other day that she has a couple of visually challenged friends who are interested in getting their Foundation licence.

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Learn CW online

Stephan Forka VK5RZ

I found a very interesting report called Learn CW Online.

A website to learn and practice Morse telegraphy has been launched: Learn Morse Code Online: http://lcwo.net/

There are already hundreds of training programs, MP3/CD courses and practice aids available, but LCWO follows a radically different concept. While sticking to well-proven methods for learning and practice, all you need for using LCWO is a web browser! This gives the user the liberty to practice CW wherever an internet connection is available, always retaining the personal settings, scores and statistics.

Currently the site, which is available in seven languages (Czech, English, French, German, Italian, Portuguese, Spanish) offers a complete Koch method Morse course, code group practice, callsign and plain text training modes and also allows the conversion of random text to Morse MP3s.

A high score list is available to compare results with other users; personal statistics help to track training progress.

LCWO.net is a non-commercial project. Creating a free account only takes a few seconds, and you can start practicing CW right away!

The site is courtesy of Fabian Kurz DJ1YFK.

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Modified wood-working drills for sheet aluminium

Drew Diamond VK3XU

Adapting these standard wood-working bits to cut sheet aluminium not only saves you the cost of special, rarely used tools but strangely enough makes the bits work better at their original task.

The usual tool for making clean round holes in aluminium sheet is the hammer or bolt- operated socket punch (References 1 and 2). Sets of punches may be purchased from at least one overseas supplier, but their cost may not be justifiable for the constructor who only needs to make the occasional round hole in aluminium.

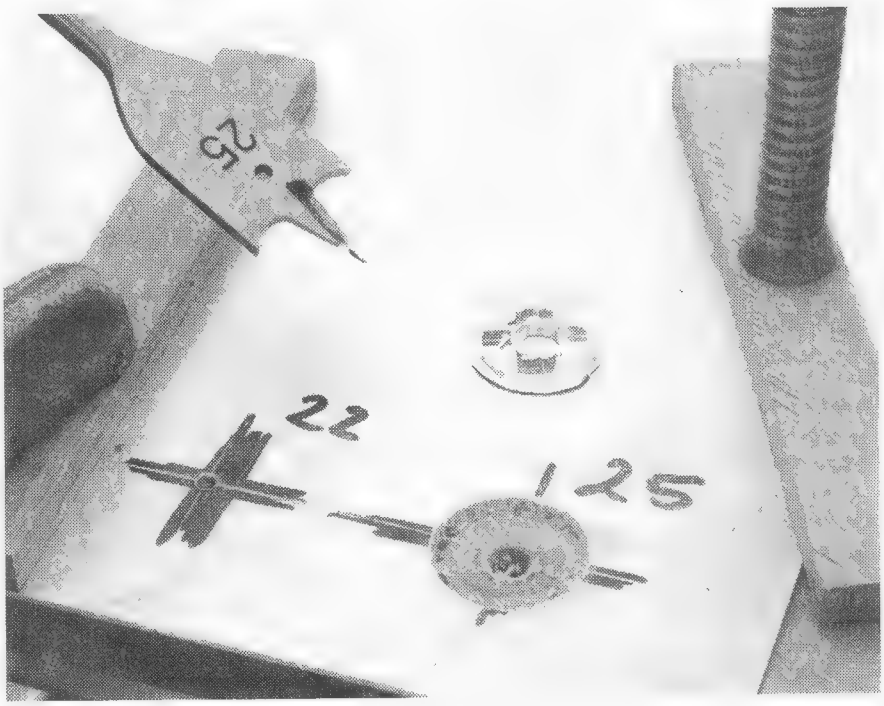
Fair results are obtainable with ordinary flat style 'Irwin'™ wood-drills, generic versions of which may be bought quite cheaply from tool suppliers in a range of imperial and metric sizes. For this purpose, these drills require the modification described below, and actually work rather better in wood or plastic afterwards.

Using an angle-grinder, carefully 'nibble' metal from between each of the outside cutting edges and the pilot point. To maintain balance, alternately remove only a small amount from each side until you have formed two new outer cutting edges, as can be seen in the Photo.

Ideally, the drill should be used in a bench-drill, with the job firmly clamped to the drill table, and backed with scrap wood. However, with care and practice, quite good holes may be produced with an ordinary (preferably variable-speed) electric hand-drill. Again, the job must be firmly G-clamped upon a sturdy work surface. Use a scrap of chip-board (or similar) as a backing to prevent damage to the bench.

Always wear safety specs when drilling. Make it such a habit that you feel naked without them.

First, with a twist drill, make a small pilot hole (about 3 mm) in the exact spot required, then follow through with the modified wood-drill. The resulting hole may be a tad larger than the nominal drill size so, drill a slightly smaller hole initially if the required diameter is critical. Do not 'force' the pace - apply just a firm downward pressure. It should require about 5 or 10 seconds to break through the other side of 1.6 mm sheet. A hole thus made, and the waste, is pictured in the Photo.



A hole made with the modified wood drill (and the waste).
Photo: Andrew Diamond

Finally, clean up burrs and rough edges with (say) a second-cut file, and bring the hole to the exact required size with a half-round file.

References and Further Reading

1. "Making Holes in Sheet-metal"; *Amateur Radio,* April 2001.

2. *Radio Communication Handbook;* RSGB, Ch. 26 in any recent edition.

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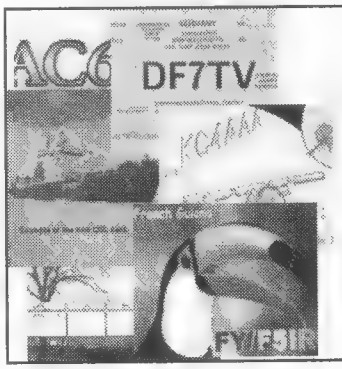

QSL

THE WIA IS THE CUSTODIAN OF SOME 800,000 QSL CARDS

AND WE WANT MORE!

If you are assisting in the disposal of the shack of an SK, or are moving, or have too many of your own, do not throw out the QSLs as they are of great historical value.

Ring the WIA on **(03) 9729 0400** and we will make arrangements to have the cards placed in our repository at our new premises. It is the aim of the WIA to have a revolving display from this, one of the world's biggest, collections of QSLs, superbly assembled by Ken Matchett VK3TL – SK.

ARRL invites nominations for 2008 International Humanitarian Award

Nominations are open for the 2008 ARRL International Humanitarian Award http://www.arrl.org/FandES/field/awards/humanitarian.html. The award is conferred upon an amateur or amateurs who demonstrate devotion to human welfare, peace and international understanding through Amateur Radio. The League established the annual prize to recognize Amateur Radio operators who have used ham radio to provide extraordinary service to others in times of crisis or disaster.

A committee appointed by the League's President recommends the award recipient(s) to the ARRL Board, which makes the final decision. The committee is now accepting nominations from Amateur Radio, governmental or other organizations that have benefited from extraordinary service rendered by an Amateur Radio operator or group.

Amateur Radio is one of the few telecommunication services that allow people throughout the world from all walks of life to meet and talk with each other, thereby spreading goodwill across political boundaries. The ARRL International Humanitarian Award recognizes Amateur Radio's unique role in international communication and the assistance amateurs regularly provide to people in need.

Nominations should include a summary of the nominee's actions that qualify the individual (or individuals) for this award, plus verifying statements from at least two people having first-hand knowledge of the events warranting the nomination. These statements may be from an official of a group (for example, the American Red Cross, The Salvation Army, a local or state emergency management official) that benefited from the nominee's particular Amateur Radio contribution. Nominations should include the names and addresses of all references.

All nominations and supporting materials for the 2008 ARRL International Humanitarian Award must be submitted in writing in English to ARRL International Humanitarian Award, 225 Main St, Newington, CT 06111 USA. Nomination submissions are due by December 31, 2008. In the event that no nominations are received, the committee itself may determine a recipient or decide to make no award.

The winner of the ARRL International Humanitarian Award receives an engraved plaque and a profile in QST and other ARRL venues.

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continued from page 4

WIA News

basis) with a 5 watt e.i.r.p. power limit, and so to harmonise arrangements for similar services between Australia and New Zealand, the WIA proposes that Australian Advanced amateurs be allowed to operate on the segment 135.7 – 137.8 kHz with a maximum radiated power of 5 watts e.i.r.p., rather than the 1 watt e.i.r.p. limit proposed.

The WIA noted that the draft Spectrum Plan retains the existing primary allocation to broadcasting and the existing secondary allocation to the amateur within the band 7100 - 7200 kHz, despite the decisions of WRC 03 that amateur be primary and broadcasting cease in the band after 29 March 2009. However, Australia is a party to a footnote allowing fixed and mobile primary in that segment.

The WIA has proposed that amateur be co-primary with Fixed and Mobile, and a footnote be inserted into the Australian Plan acknowledging that the band is designated to be used principally for the purposes of defence and national security and that the amateur service shall not cause harmful interference to, nor claim protection against interference from, fixed or mobile service stations operating within Australia.

Once the changes to the Spectrum Plan are made, amendment of the amateur LCD is required before Advanced licensees will be able to use the new LF band.

SET on 8 November

International Amateur Radio Union member societies and emergency groups will take part in a joint on-air communications exercise in November. The Global Simulated Emergency Test on or near the emergency Centre-of-Activity frequencies on the 80, 40, 20, 17 and 15 metre bands runs 0400 to 0800 UTC on Saturday, 8 November.

IARU WAC Award

WIA Awards Manger Allan Meredith VK2CA has announced that the IARU Worked All Continents (WAC) award can now be applied for by WIA members through the WIA Awards program. The card checking and certification is carried out by the WIA Awards Manager and the certificates are issued by the WIA under agreement with the ARRL Awards Branch. This means that cards no longer need to be submitted overseas for this award - a first for the WIA.

"This is an excellent introductory award for DXer's" said Allan. "Only six contacts are required (one in each continent). There is also available a 5 Band WAC and various other endorsements that can be gained for the more serious DXer."

More details can be found on the WIA website.

Perth D-STAR repeater launched

Some 56 amateurs participated in the launch of the Perth D-STAR repeater at the Darling Ranges RSL Hall in Kalamunda on Saturday 18 October 2008. Host was the Perth D-STAR club, the Western Australian Repeater Group. The repeater was given to the WIA by Icom Australia, which was represented by its Managing Director Takashi Aoki VK3NON and Peter Willmott VK3TQ.

Also participating in the launch was WIA President Michael Owen VK3KI and D-STAR Coordinator Richard Hoskin VK3JFK.

The WARG was responsible for all the ancillary equipment and the many people who contributed to the success of the project.

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Some Tips for the New DXer

The DX pileup — how it works and how to work it

Frank C. Getz N3FG

Judging from what I hear on the bands, there are a lot of upgraded hams who have gotten into chasing long distance contacts (DX) and are learning the intricacies as they go along. Since I haven't seen a good article on this subject in QST for some time, I thought that some basic pointers may be of help. I work mostly CW and my comments are from that perspective, but most of what I have to say can be applied to any mode. The goal is to make the DX contact without making enemies of your fellow hams. Working DX is a sport with rules and procedures like any other sport and if they are followed, your enjoyment and chances for success will be maximized.

Basically, you want the DX station to hear you, but you don't want to keep others from hearing the DX station. Following these DXing Tips will help maximize your chances of being heard without causing interference (QRM) to others. If everyone in a pileup is playing by the rules, while the DX station is in QSO with his selected target, the frequency (or frequencies, if operating split) should get very quiet and you will only hear the DX station or his target station. As soon as the DX station signs, everyone again resumes calling. As long as no one is calling on the DX station's frequency, everyone can tell when the DX station has selected his next target and the calling will stop until the DX station signs again. During this lull in the calling is the time to select the frequency for your next attempt.

Frank Getz N3FG

Frank was first licensed in 1961 as K3PDW. He prefers to operate CW and occasionally RTTY and PSK31. He loves to work DX, but uses a casual approach to adding countries to his list. He is a Director of the Mobile Sixers Amateur Radio Club, former advisor and VE for the Delaware Technical and Community College radio club and a member of the ARRL. He has degrees in Electrical Engineering and Computer Science and has written several engineering books and Amateur Radio related magazine articles. Frank can be reached at 685 Farnum Rd, Media, PA 19063 fcgetz@juno.com

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DXing Tips

1. Listen! Don't jump into the fray before you understand the dynamics of the DX operation. What is the DXer's call? Is he/she operating split — transmitting on one frequency, but listening for calls up or down the band? Are other hams in your area getting through?
2. In a large pileup, it is never a good idea to call the DX station on his frequency and never, ever tune up on the DX station's frequency. If he sends his call followed by "up," he is listening up the band and not on his transmit frequency; if he says "down" then he is listening down the band. If you call on the DX station's transmit frequency, no one else can hear him and he won't hear you.
3. Never transmit while the DX station is in contact (QSO) with another station. He can't hear you when he is transmitting and he doesn't want to hear you when the station he is listening for is replying.
4. Never transmit just because someone else is calling the DX station unless you are sure he is listening for a call.
5. Never let a computer select your transmitter's frequency and time of transmission. This is a sure recipe for causing QRM.
6. Keep your calls short. Once or twice is usually sufficient.
7. If you must tune up on the air, find a clear spot a little way up or down the band and be sure to identify. When you move back to the desired frequency, you won't normally have to retune.
8. A technique that often works is to set your transmit frequency to that of the station currently in QSO with the DX station and after you are sure the QSO is over, send your call. Hopefully the DX station hasn't had time to tune away and will hear you call. The only drawback is that others will often be doing the same thing. Sometimes you will need to set your frequency slightly higher or lower than that of the last station worked for you to have a chance of being heard.
9. Sometimes when you have been trying for a while and it seems that you will never get through, it is more productive to take a break and do something else, returning when the pile-up has thinned out a little. I have had this work more than once.
10. If you work CW, work at getting your code speed up to the point where you can reliably recognize your call. Don't depend on a computer to copy your call on a noisy band. Your best CW filter and decoder is still the one between your ears.
11. Do you really need the contact? If not, why not let people that do have first crack at the DX?

WICEN heads south for the Oceania

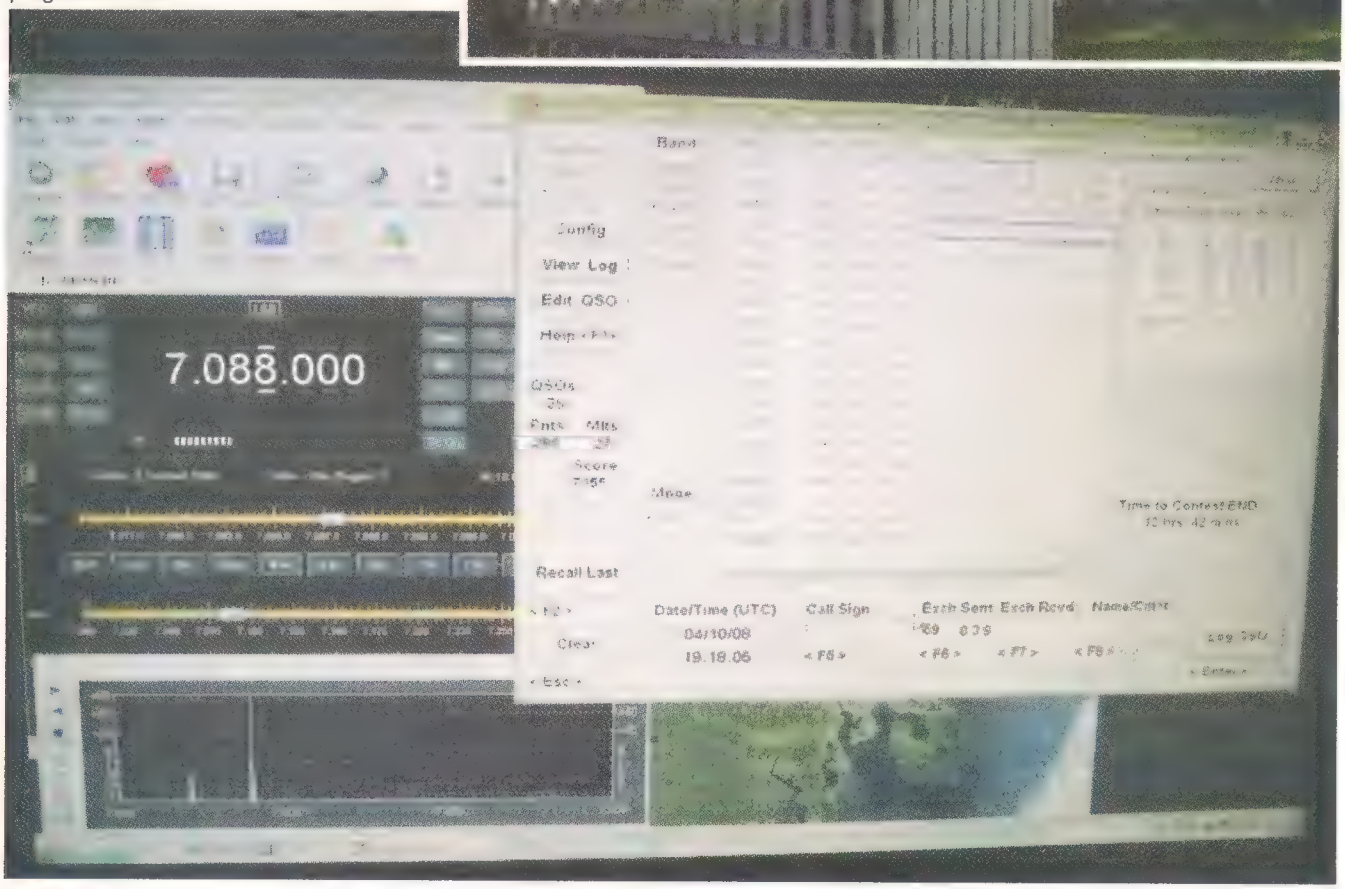
Roger Nichols VK7ARN

WICEN Tasmania (South) headed about as far south as you can get on the bitumen for the 2008 Oceania DX contest. A shore side holiday house in Southport (43°25′S 146°58′E) provided a comfortable base for VK7s AD Andrew, ARN Roger, FCDW Chris with harmonic young Chris, JGD Garry and NXX Stu.

The station was an Icom IC-706MkIIG with IC-AH4 tuner feeding a 12 metre vertical constructed with 60, 50, 32 and 20 mm aluminium tubing. Assorted ground radials with sundry attachments to ground stakes and locally available star pickets, in place on the high water mark, provided a ground.

At right: A view of the antenna, and the general location.

Below: The popular VK Contest Log program screen.



Contacts were spasmodic but interesting, providing a comfortable but far from boring contest. Contacts included IL, JA, K, N, OH, PD, RK, RS, VA, VE, VKs 1, 2, 3, 4, 5, 6 and 7, YB, YL, ZL 1, 2, 3, 4 and ZMs. Chris VK7FCDW disappeared about 18:00 local but resurfaced about 02:00 to man the late shift and keep those in the closest bedroom awake with his QSOs – but who could complain!

An early finish, about two hours short of the full contest duration, when new contacts fell to one per forty five minutes, saw a pack up, clean up and head up North. All tired but happy after an enjoyable weekend.

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The base loading antenna tuner.

Stu VK7NXX and Andrew VK7AD.

Working with SMDs

Grant McDuling VK4JAZ

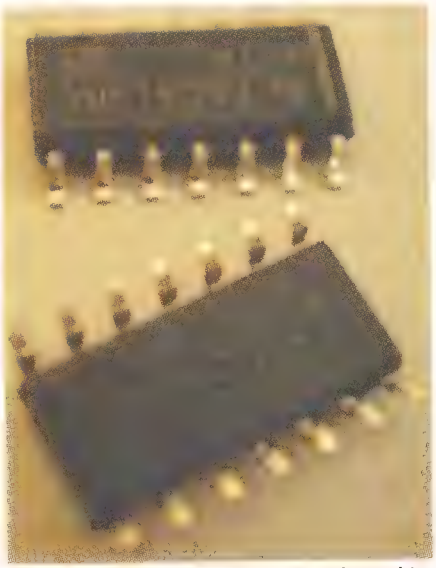
Being an avid homebrewer and kit constructor, I guess it was inevitable that sooner or later I would have to face up to the fact that I would have to master working with SMDs (surface mount devices).

Until now, the thought of winding intricate toroidal transformers filled me with dread, but SMDs! That was a whole new kettle of fish.

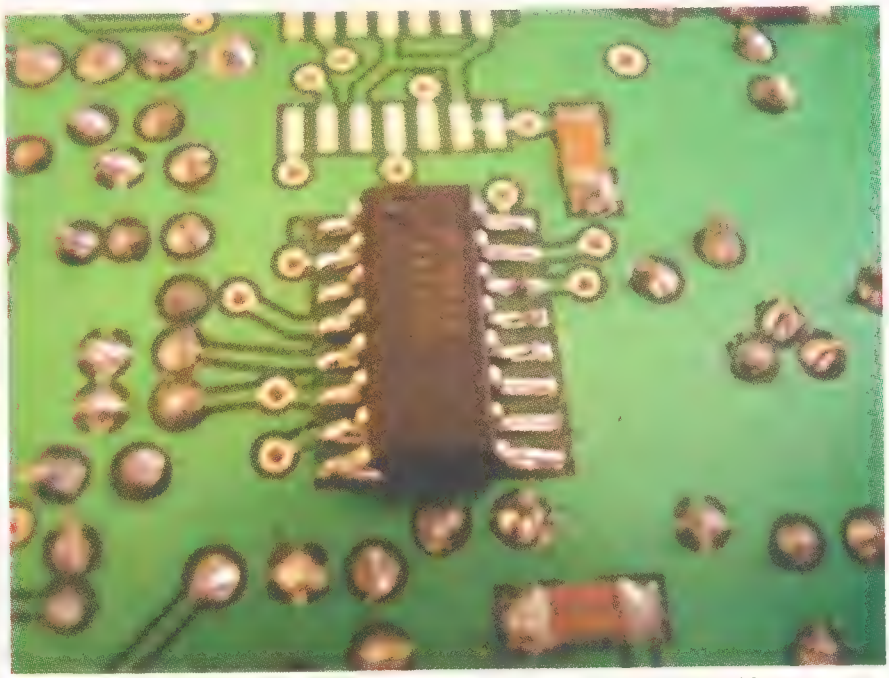
As amateur radio goes more high tech (so what is wrong with that?), more and more kits are being offered that make use of SMDs – some more extensively than others. So what was I to do if I wanted to continue melting solder and having fun in this hobby? No question about it, I would have to put my fears aside and take the plunge.

I must say at this point that I had been keeping a gentle eye on some of my favourite ham radio web sites and noticed that most of the really exciting offerings, like software defined radio kits, relied heavily on the latest in electronic technology and came loaded with surface mount devices. The good thing about this is that we now had one component to install instead of many, so from a soldering and construction point-of-view, this drastically reduced the chances of mistakes and the resultant frustration that seems to accompany so many well-intentioned projects.

So I decided to dive in and give it a go. What I discovered was that



These devices have tiny feet and need to be handled with care.



An SMD FST3253 soldered on the PCB. Note the 0.1 uF SMD 1206 caps.

SMDs are not as problematical as I had initially thought. In fact, with a little patience, I am now convinced they are the way to go.

The first thing I discovered was that all the SMDs in my kit came in an anti-static container. For very good reasons – static can kill many of the devices.

Therefore, good electrostatic discharge (ESD) precautions are required when handling these devices. This means a grounded wristband as well as a grounded conductive working surface mat should be used. They are available locally at the usual electronic supply outlets but they are rather pricey so I relied on discharging myself whenever I worked with these components.

What I did to achieve this was to run a cable from the earth bar in my shack up to my work bench so that I could discharge myself as well as the tools I was using at regular intervals simply by touching it.

I also made sure I had taken off my rubber sandals as walking on the carpet in the shack had the potential to generate static electricity. I minimised my movements when sitting in my chair at the work bench.

Next I bought a Goot 10 – 13 W soldering iron specially designed for SMD work. It has a beautifully thin tip that makes fine soldering jobs easy; all you need is a steady hand. I also made sure I had a magnifying glass handy to check my handiwork, as solder bridges can appear so easily. I also bought a tube of 1 mm 60/40 resin core solder.

Keeping the PCB steady is just as important as keeping your hand (and the iron) steady, so I made use of the metalwork vice from my workshop. A small, bright spot light was used to inspect the job, both before and after soldering. The final piece of equipment that made my life a lot easier was a pair of tweezers.

So, how did I go about mounting the incredibly small SMDs?

The first thing I did, after identifying the component to be installed and its position on the PCB was to lightly tin the mounting tracks on the board. Then, after touching my grounding wire (my hand as well as the tweezers) I picked up the SMD integrated circuit and made sure it was oriented correctly relative to its mounting position.

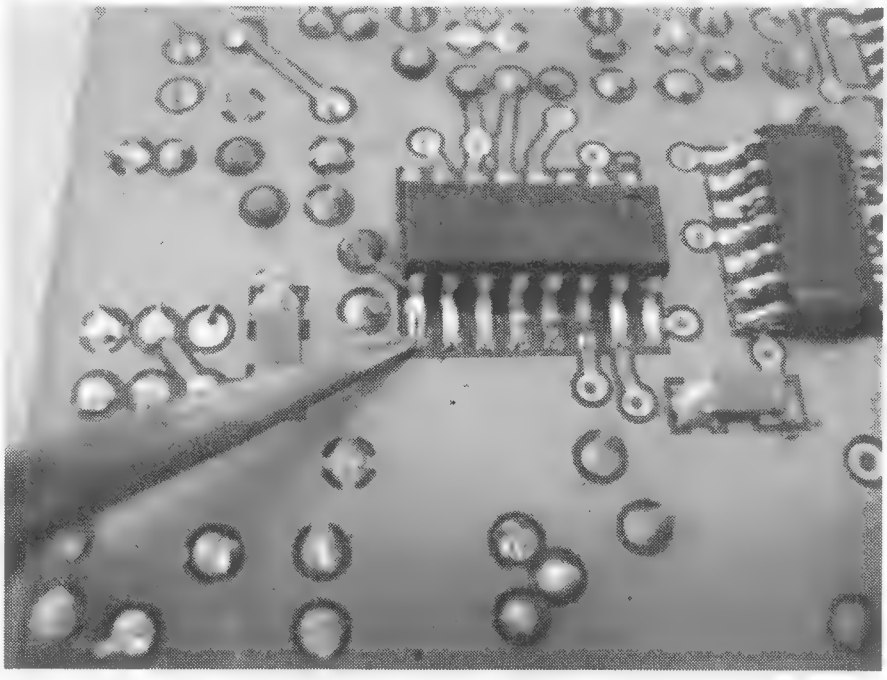
Then, with pressure from the tweezers to keep it in position, I gently touched a corner pin with the iron to melt the solder and tack it into position. I then gently touched each pin in turn to melt the solder under it. A few seconds later and presto, job done. Simple, neat and quick.

I am now a fan of SMDs and wonder if I can ever go back to the days of through-hole technology and all the bother of populating PCBs with hundreds of components.

How times change!

ar

Essential tools: from left, magnifying glass, small spotlight, tweezers, soldering iron.



The SMD soldering process underway.

Hills Amateur Radio Group VK6AHR –

'The First Ten Years'

Keith Bainbridge VK6XH from information compiled by Norman Campbell VK6UV

On Friday 28th January 1983, thirty people met at the Kalamunda Hotel, in the downstairs function room, at the invitation of John VK6HQ and Des VK6SU. As a result of that meeting, the Hills Amateur Radio Group (HARG) was formed.

After several months of meeting at the Kalamunda Hotel, we were invited to move our meeting place to the Kalamunda Senior High School, and this was duly done, and meetings were subsequently held there.

Later, (in 1989) Richard VK6BMW, one of the members of the group, had contact at the time with the Lesmurdie Guides and Brownies, and he was able to negotiate a tenancy for the group at the Guide Hall, at the junction of Sanderson and Brady Roads, at a peppercorn rent, paying only for services used.

We moved into these premises and were given a space as our own at the end of the hall. However we needed security, both for equipment and operating space, and so the call went out. This was responded to by Norman VK6UV who was able to provide (from sources not known) panels, doors, door frames, benches, venetian blinds, and fluorescent lights. Fred VK6UR was renovating his home, so the group headquarters became the proud possessor of fitted carpets.

But to some detail.....and back to 1987.

On 30 January 1987 VK6HQ established the first edition of the 'Beacon', the HARG Newsletter.

On 3 February 1987 the HARG stood before a Justice of the Peace for the swearing of the deeds of incorporation, with the following attending:

VK6NV, VK6CF, VK6HQ, VK6NSU, VK6UV, VK6IK and VK6CU (guest onlooker).

During February 1987, 30 Founder memberships were established.

At this time, a refreshment facility was organised comprising tea/coffee, and the cost was 20 c per cup, to be paid into an Honour Box. In spite of inflation, six years later - still 20 c per cup, and sometimes with a bonus of biscuits or cake!

On 25 March 1987, a live demonstration of AMTOR was given to the group by Peter Hackett VK6PK.

Eric Hawkins VK6YQ, a founder member, and one of our stalwarts, passed away on Sunday 29 March 1987 after a short period of illness.

New member subscriptions were set at $5 per annum plus $5 Beacon postage, on 30 March 1987.

The April 1987 Meeting, held on the 29th, had a talk by Jenny and her OM Trevor VK6YJ, our white stick members, together with faithful 'Jess', showing technology for the sight handicapped, with demonstrations of a Perkins Brailler, talking scales, MOWAT sensor, Braille-writer, talking calculator, talking clock and more.

John VK6HQ and Norman VK6UV ran a very well attended 'Radioactive Fun Rally', with ten carloads of enthusiastic amateurs, their families and friends, enjoying the challenge of car rallying and amateur and CB radio combined.

Results were:

First:	Phil VK6ZPP
Second:	Phil VK6ZKO
Third:	Gary VK6XQ

Cy VK6IK gave a talk on antennas on 29 July 1987 which was well received, and this was preceded by the following Committee being elected unopposed:

President	John Hawkins VK6HQ
Vice Pres.	Chuck Farkas VK6CF
Secretary	David Brown WCE571
Treas.	Sue van den Avoort VK6NSU
Committee	Norman Campbell VK6UV
	Neville Newham VK6VU
QSL Sub Bureau	Milan Udall VK6ZH

On 10 August 1987, the Club calling frequency of 145.600 MHz simplex was adopted, later to change to 146.450 to accommodate novices on 2 metres.

The October 1987 edition of the Beacon had the following 'Diary Notes':

October Meeting	Gordon VK6AGX 'Valves in Linear Application'.
November 1	Tic Hill Picnic.
November 3	VK6HS – 'Your Health Today - the Pritikin Way'.
November	Video.
December 8	WIA Christmas Party.
December 12	Dine-out at Williners Restaurant.
January 1988	Annual Junk Sale.

On 8 December 1987, the HARG received an award from the Wireless Institute of Australia for 'Outstanding Service to Amateur Radio'.

During the 1987 Kalamunda Festival, a display was held in Stirk Park and was considered to be a success from the amateur radio point of view. The station displayed by Neville VK6VU was definitely the highlight.

The working fund at this time was $61.48.

28 October 1987 saw Gordon VK6AGX displaying a natural ability at the blackboard with an interesting talk on valves in linear applications.

Two stations were fired up for the 1987 JOTA with Roleystone Guides and Brownies entering JOTA for the first time; the HF Station was operated by Maurice VK6ATP and VHF by Trevor VK6YJ. The stations came 'on air' about 0130 UTC.

HF antennae worked well, this being a long wire strung between two trees conveniently placed for 20 metres. For 2 m, a pole with a roll-up antenna was set but this did not give the right results, so Hartley VK6ZHB went home and brought back a ground plane and a linear capable of 80 watts.

A few contacts were then made through channel 8, and one into Gosford, north of Sydney, via the satellite link on channel 4. The day was held together by Laurie VK6ZLD, Christine VK6ZXD, Hartley VK6ZHB and Maurice VK6ATP.

VI88WA - the Bicentenary callsign, was activated by HARG members during the month of February 1988; members involved were VK6CF, VK6HE, VK6HQ, VK6IK, VK6XC, VK6ZH and VK6AEA.

Events during March 1988 were a practical night on the first, at 7.30 pm and a Picnic/Foxhunt at Carmyah, starting at 1130 am on March 6.

It was during April 1988 that the Committee of the HARG decided to write to the Kalamunda Shire Council along the lines of '.....whilst the Group's premises at Kalamunda Senior High School had proved eminently suitable for lectures and general meetings, it was felt an additional venue where a permanent radio station could be both secured and operated and where members and their families could meet socially was desirable. Additionally, such a radio station could be of service to the community in emergencies...does the Shire know of the existence or future availability of, suitable accommodation within the Shire confines?'

As a result there seemed to be the opportunity of the group leasing our own Club premises for approximately $500 per annum!

At the August 1988 meeting, Cy VK6IK gave an interesting lecture on Linear Amplifiers.

The 1988 Kalamunda Festival attracted a lot of interest from the passing crowd (particularly the blackboard showing with whom we were in contact). Some of the operators of the day were Norman VK6UV, Merv VK6APM, Keith VK6BRK, John VK6HQ and Richard VK6BMW.

Some items of interest during the early part of 1989 were a talk by Greg on Seismology, on 22 February, and a visit to the Perth Radar Station at Kalamunda on 25 February.

29 March 1989 saw Glen Ogg delivering a stimulating lecture on interference, with emphasis on what is the operator's responsibility, and what is the Department's responsibility.

At 26 April 1989 the Treasurer advised funds of $192.28.

Planning started in July 1989 for the Kalamunda October Festival to be held on 28 October and it was at this time that we moved to our new Clubrooms at the Paxhill Guide Hall, in Sanderson Road, Lesmurdie, thanks to the efforts of Richard VK6BMW.

On 31 May, Will VK6UU gave a talk on the problems of the Repeater Group and the linking of 70 cm, particularly with the novices and the legal use of a 2 metre repeater linked to a 70 centimetre repeater.

June 1989. Sam Wright G3CYT joined the Group.

August 1989 saw Membership dues double to $10 per annum, with an additional $5 for Beacon postage, and at 30 August the Treasurer reported a balance of $358.72.

An extremely interesting talk was given on 27 September 1989 by Brian Goodchild of the Cartographic Names Committee.

The weekend of 21-22 October saw the Group hosting JOTA with many Scouts, Cubs, Guides and Brownies passing through the Station. Unfortunately there was a very large solar flare on Thursday prior to the JOTA week-end which practically wiped out all HF communications; this was however beyond the control of the Group.

The week-end was not completely wasted however, as many youngsters managed to 'talk' to others on the radio, even if we did use 20 metres to East Fremantle and Riverton. Use was also made of the Aussat link to VK/ZL enabling a number of the young folk to 'DX' on 2 m. Thanks were due to the usual 'core' HARG members who made it all possible - Merv VK6APM, Fred VK6UR, Norman VK6UV and Richard VK6BMW. Thanks were also due to David VK6PDA and Phil VK6ZKO for liaising with the Scouts and Guides, David, who also stayed overnight to babysit the equipment, John VK6RI and Trevor VK6TS who operated on Sunday morning, and Sue VK6NSU and Adrian VK6CU for dropping in and out over the weekend to assist where needed.

28 October saw an excellent turnout of members for the Kalamunda Festival, those helping with their presence and enthusiasm or equipment loan were - Merv VK6APM, Fred VK6UR, Milan VK6ZH, Phil VK6ZKO, Richard VK6BMW, Trevor VK6YJ, Sue VK6NSU, Adrian VK6CU, Trevor Wright, Sam VK6YN, Gordon VK6YBT, Les VK6EB, Poppy VK6YF, Chuck VK6CF, Cy VK6IK, Phil VK6ZPP, Alyn VK6KWN and John VK6ZKZ.

9 December saw the 'end of year' Christmas windup and barbecue - 'BYO Meat' - the Club supplied salad and rolls.

During the early part of 1990, the new club premises continued to improve with security being increased for the safe storage of equipment; Cy VK6IK provided two regulated power supplies, Phil VK6SO produced a single channel VHF transceiver to which Fred VK6UR immediately fitted crystals for 146.450 MHz, the Club frequency, and also produced a co-ax switch to accommodate our many antennas. Also at this time Gordon VK6YBT loaned the club his Swan 350 complete with power supply.

12 Teleprinters appeared in the clubrooms courtesy of VK6SO!

The 1990 Annual General Meeting was held on 25 July 1990 and after much to-ing and fro-ing a new committee was elected.

JOTA 1990 came and went with the club establishing the usual station for the Guides, Scouts, Cubs and Brownies, many thanks were owed to Merv VK6APM, Fred VK6UR, Richard VK6BMW and Phil VK6ZKO.

27 October 1990 brought the Kalamunda Festival and a station was set up in Stirk Park for the day.

1991 came upon the Club all too quickly, and activities taking place were the 1991 John Moyle Contest on 16 March at Mt Gungin, and a radio orientated fun car rally (or radioactive rally!) on 7 April, and later in the year, Camp Quality, where a HF station was set up for a week.

Equipment continued to be acquired with the appearance of a HF Rig, a photocopier, a Grid Dip Oscillator and a Noise Bridge, together with numerous other pieces of club owned property.

Events such as those listed, including static displays at the local libraries, continued over the following year, culminating with the holding of 'Ten Year' celebrations at the Kalamunda Hotel, where the club had had its inception some ten years previously. The room upstairs was taken over by members and their wives/girl friends and a very friendly dinner was held, the end of the evening being marked by the presentation to Trevor, VK6YJ, our white stick operator, who received the inaugural plaque for 'Amateur of the Year'.

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DX Chasers Club - Faure Island DXpedition, 2008

Keith Bainbridge VK6XH

The members of the West Australian DX Chasers Club (DXCC) are an adventurous lot and all are also members of the Northern Corridor Radio Group. The DXCC have organized several IOTA DXpeditions over the years – including Woody Island off the coast near Esperance, the Abrolhos Islands off Geraldton, Direction and Thevenard Islands out from Onslow and earlier this year, to a little known wildlife preserve known as Faure Island (IOTA OC-206) in Shark Bay about 900 km north of Perth.

The island measures about 10 km by 6 km and lies about 20 km offshore. For the last 60 years, it was used as a sheep and goat station but now is owned and managed by the Australian Wildlife Conservancy – an independent, non-profit organization based in Perth.

Faure Island had never been activated for amateur radio before and this proved an irresistible challenge to the DXCC.

Due to its isolation and recent enforced freedom from introduced predators, the island is now used as a safe and disease-free home and breeding ground for such endangered native species as Western Barred Bandicoot, Shark Bay Mouse, Banded Hare Wallaby and Burrowing Bettong or Boodie. An active trapping, monitoring and translocation program is managed by a very few dedicated AWC scientists, officers and volunteers.

Faure Island had never been activated for amateur radio before and this proved an irresistible challenge to the DXCC. Arrangements were made over many months and approval to land a team of nine 'volunteers' became a reality for a six day period between 26 March and 1April 2008.

Planning for the trip was extensive and included four vehicles towing two 5.5 m vessels and a 3 m dinghy. In the past we have hired charter boats, but this time, we decided to ship all our gear and supplies to the island in members' boats – a sobering undertaking. Three stations were put together and a W8JK beam constructed. Other antennas included a three element tribander and a Carolina Windom. A couple of linears, a generator and a heap of fuel were also required.

The convoy left the NCRG clubrooms at Whiteman Park early on Tuesday 25 March and arrived in Monkey Mia in time for a few ales late in the afternoon. Next morning, a few trips back and forth got all of us and our gear onto the island. We were greeted by a billion flies – constant daytime companions for the duration of our stay. We had both portable masts and beams up in record time and were on the air as VK6FAU by dinner time. Then the real fun and QSOs started...

Our AWC hosts were fine people and as we were all signed up as volunteers to earn our keep, we jumped in and assisted with many tasks such as cleaning out the old shearing shed to make room for trapping equipment and a workshop and conducting 'transects' to gather research data on local reptile numbers for a graduate student's thesis.

next morning the bailing party discovered that one of our boats was missing

These involve several people lining up ten metres apart and striding off across the low scrub (some of it gets a little nasty!) in straight lines taking note of how many reptile holes and tracks you can see for 100 m. Then you simply walk sideways for 5 m and backtrack to your starting line. In this way, many hectares of all the different habitat types can be investigated in a few days. We provided labour for many of these!

We also got involved in some reptile and mammal trapping. A host of measurements are taken from each animal to aid research studies. This data is then used to plan for future translocations of island-bred stock back into suitable areas on the mainland. Thus, viable populations of currently endangered species will be built up over time so our children will have a chance to appreciate some of their island continent's original species diversity.

The weather started off quite warm and tropical but we were in for a change. A degenerating cyclone passed to the west of the island early on Friday whipping up some gale-force winds and dumping 100 mm of rain on us in 24 hours.

Our AWC host Joanne said that some rain was obviously needed and would be appreciated, but this was ridiculous! The moored boats needed to be bailed out in the afternoon and the island developed its own inland sea. Worse was to come, as next morning the bailing party discovered that one of our boats was missing. It had broken its mooring rope during the night and was probably washed up on the beach south of Monkey Mia – not a pleasant thought for any of us, but especially bad for the boat's owner.

A search and salvage operation was cranked up by telephone using trusted AWC contractors on the mainland whilst another boat was hired to get us all back to Australia on Tuesday morning.

In true amateur spirit, none of the above tribulations detracted from the camaraderie or indeed the QSO tally on several bands which continued to climb daily. Over the weekend, the CQWW WPX SSB Contest was entered

Approaching cyclone.

During the cyclone

The partial erection.

to try to contact as many operators and entities as we could manage given the propagation vagaries at the end of Cycle 23.

At times the QSO rate was extraordinary and even some members who are more likely to be seen playing with antennas or skulking in the background were seen shouting into a microphone – with a cold one by the laptop keyboard and a manic grin on their face. Everybody loves a pile-up!

After six days and nights of great fun, volunteer work and basically ham heaven, we had to pack it all up and head back to civilization – 20 km away over the waves. This was completed without incident thanks to a lot of hard work by all and the skill of our intrepid boat captains, so by late afternoon on April Fool's Day, nine weary but happy amateurs repaired to the Monkey Mia Resort bar for a few well-deserved coldies and some more of that wood-fired pizza.

The lost boat was found where expected but was very much the worse for wear thanks to a rocky beach and the continual pounding of the waves over three days. With some local help, we managed to get it back onto its trailer so all of our gear could be taken home.

The WA DX Chasers Club sincerely thanks the Australian Wildlife Conservancy – especially Joanne and her dad Russell - for allowing us onto their island and for looking after us so well. It was a great experience and many of us would like to go back one day – but perhaps we will charter a boat next time! We made many contacts despite

Just some of the ten billion reasons for not being there.

The crew.

the marginal conditions, so make sure you inundate our QSL manager (Neil VK6NE) with cards. Unfortunately for health reasons, Neil could not go with us on this one – he was not impressed!

The 2008 DXCC Faure Island DXpeditioners were: John VK6NU, Alek VK6APK, Richard VK6HRC, Richard VK6TT, Wayne VK6EH, Trevor VK6HTW, Dave VK6YEL, Gerald VK6XI, Darby VK6FONC and John VK6JX. With us in spirit were past revellers Neil VK6NE and Joe VK6BFI.

Best 73 and happy IOTA hunting!

ar

The camp.

The shack.

Poor Darby's boat.

The reason for being there.

News from

VK2

Tim Mills VK2ZTM
arnews@tpg.com.au
ARNSW

After a two year delay, with set-backs and rejections at the local council, the 'shed' for the VK2WI Dural site has been approved. It came to a head in September when an application lodged with the Land and Enviroment Court allowed the construction. The shed design had been developed in 2006 and a deposit paid, pending approval. In October 2008, the shed was ordered with work to start soon on the slab. There should be something to observe by year's end.

The Education section of ARNSW has been asked by the Central Coast ARC to provide the full range of Amateur assessments at the 2009 Field Day at Wyong. Education Officer Terry VK2UX told a recent committee meeting of the request. They had a succesful trial run at the Field Day this year. There will be more details closer to the event in these notes and VK2WI News.

The final Trash and Treasure event for the year will be at the VK2WI site on Sunday the 30th November. Start is 10.30 am but as attendees keep getting earlier the BBQ operators are considering a breakfast shift. The afternoon is a show and tell by the ARNSW Home Brew and Experimenters Group followed by a lecture or demonstration. Membership of ARNSW and, automatically, the Home Brew Group is in two or five year blocks at $10 per annum. Membership forms can be down loaded from the ARNSW web site: www.arnsw.org.au

Clubs

The **Hornsby and District ARC** provided the amateur radio content at a "Reminiscence" display highlighting early Australian communications and wireless by the Ray Park Heritage Group Inc. in Carlingford on Friday the 10th October. It was at a Scout hall, near the site of the former Pennant Hills AWA/ OTC communication site. A series of talks were presented: Introduction – Pennant Hills Wireless Station; Morse code and construction of overland telegraph -Adelaide to Darwin and world's first wireless message, from Wales to Wahroonga. There were displays mounted by the Telstra Museum, the Morsecodians, early spark equipment constructed by Peter VK2AQJ and the VK2WAH Marconi event station co-ordinated by Jo VK2KAA. The event continued on Saturday with the theme "Back to Pioneer Days and Farm Life".

Monday the 22nd September was the 90th anniversary of the first direct wireless message from UK to Australia. In 1918 the Marconi Wireless Station at Carnarvon, Wales, transmitted two messages which were received by Mr. E.T. Fisk, the managing director of the newly formed Amalgamated Wireless [Australasia] Ltd at his residence "Lucania" in Wahroonga. A small celebration, an annual event, was held at the Wahroonga monument site. It was unveiled on the 14th December 1935. A story of the recent celebrations was posted on the WIA news site in September. Information about the annual event can be obtained from Jo Harris VK2KAA who is a Vice President of the Ku-ring-gai Historical Society Inc who look after the monument. Jo is also the Historian of the NSW Division. vk2kaa@optusnet.com.au

On the 11th of this month the **Illawarra ARS** have their annual auction in Wollongong.

The **Mid South Coast ARC** should be having their final quarterly meeting on the second Saturday of this month.

WICEN NSW has been busy with exercises during the past few weeks. There have been the annual events of the search with Police and Wilderness Rescue groups to look for the missing aircraft VH-MDX and the Hawkesbury Canoe Classic at the beginning of this month. Contact point for WICEN NSW is by mail to P. O. Box 126, Gosford 2250. email to operations@nsw.wicen.org.au, telephone 0408-397-217 or visit www.nsw.wicen.org.au

VK2AWX **Hunter Region** Monday evening news bulletins take a break from early December until early February.

It is a month closer to the **Mid North Coast Expo** on the 18 January 2009. Then there is the first **T&T** at VK2WI on Sunday 25th January. Then comes the **Central Coast Field Day** at Wyong Racecourse on Sunday the 8th February: Held earlier this year to take advantage of a slot in the normal use of the venue.

VK2WI

In late September additional text was added to the VK2WI Morse training transmission on 3699 kHz. It had been sending some 2700 words at the various speeds provided by the processor. There are now 3786 words which takes about 8 hours to cycle.

This month it is hoped that the evening 40 metre [7146] transmission will be in the clear from an adjacent broadcaster located across the 'pond'. Usually when there are changes with daylight saving, the short wave broadcasters also do a schedule and frequency adjustment.

For those who prefer live Morse training, look for VK2BWI on Tuesday and Thursday on 3550 kHz at 2000 hours local. This service on behalf of ARNSW is provided by Alan VK2ADB and Ross VK2ER. They can also do with a hand. Contact them if you would like to join them in providing a session. They also look for callbacks after the session.

News for VK2WI

News is best sent by email to arnews@tpg.com.au by Friday afternoon. The text of the weekly bulletin is posted on the ARNSW web site www.arnsw.org.au early in the week following the Sunday bulletin. Other contact points for ARNSW is VK2WI, at broadcast time 02 9651 1489. The office on 02 9651 1490 or country member freecall 1 800 817 644. All numbers end up in message systems when nobody is in attendance. FAX 02 9651 1661 or mail to P. O. Box 6044 Dural Delivery Centre NSW 2158. **ar**

VK3

Geelong Amateur Radio Club -The GARC

Tony Collis VK3JGC

Six new licences in the club

The GARC's Foundation licence course has resulted in six new calls being issued to members, of which three were in one family; that of Lou VK3ALB, his wife Jenny VK3FJEN, daughter Ingrid VK3FGRL and son Michael VK3FMIC. The additional calls were Ruben VK3FRJS, Gavan VK3FGAV and Dale VK3FBUD. There was also an upgrade for Nick, now VK3NJP.

VK3RGL upgrade

Regular users of the GARC repeater station on 147 MHz will have noticed that the station now has a significantly increased geographic coverage; as Ken VK3NW has upgraded the hardware which increased the output power from 17 watts to 75 watts.

FUNY Business

GARC member Vanessa VK3FUNY, wife of Garry VK3FWGR, provides the club with its news letter as well as stocking up the fridge with drinks, providing finger snacks from time to time and making sure that the premises are clean and tidy.

Hi Tech Imaging Systems

Lou VK3ALB introduced a colleague to provide a patient's perspective of what happens in an x-ray department along with a discussion of diagnostic techniques. The PowerPoint presentation showed the remarkable advances in imaging software that have taken place over the last few years. Typically scans that previously would take one cm slices and take around 40 minutes for a body scan can now go down to 0.5 mm slices with enhanced resolution and at the same time radically reduce the time the patient has to spend in the machine to around 10 minutes. It was of interest to note that the Geelong area has a greater number of imaging centres than does Melbourne.

Three Presentations in October

Light Beam Communications: Lecture, Demonstration and PowerPoint slide show by David VK3QM.

Aviation at Avalon: A PowerPoint slide show by Andre Van Zyl VK3AVZ.

The Whys and Wherefores of lightning protection for antennas, towers and shacks: by Donald, VK3IT.

Visit www.vk3atl.org for more information about the club and its activities.

BT

Vanessa VK3FUNY helping to maintain the GARC infrastructure

EMDRC

Down a level, up a level

If you think the heading has something to do with the share market, you are slightly off the mark. We are referring to other more exciting happenings at the Eastern and Mountain District Radio Club. The club will shortly be relocating downstairs at their existing clubrooms, which means that we will actually gain quite a bit of room. In turn, it means that if someone wanted to swing a cat (or a Kenwood TS-520), the said object, when swung, would not hit the walls of the shack. Not that anyone would want to do so.

Besides this exciting piece of news, the members were busy at the lighthouse weekend (activating lighthouses and gobbling finger food). Our recent guest speaker Tony VK3TZ told us of his rather daring DXpedition to Vanuatu. Tall tales of even taller dipoles and verticals that defied belief and a video of a visit to a live volcano kept the audience happy.

In October, members of the EMDRC plan to visit the Yarra Valley Amateur Radio Club. The highlight of the evening will be a presentation on owl tracking by EMDRC member Jim VK3AMN. This will be followed by the Whitehorse Festival, in which EMDRC members plan to assist with communications. A full report on this and other EMDRC adventures will follow when we meet again.

Joe Chakravartti VK3FJBC
Secretary EMDRC

Out on a limb

On Saturday 13th September, the EMDRC hosted an event called "Out on a Limb". The event was to discuss and demonstrate ways to get wire antennas off the ground. The aim of the exercise was to get more people on the air and do so in a safe manner.

Ross VK3HBS, John VK3JRB, Kevin VK3AKT, Harry (Club President) and Andrew VK3KIS attended the event. Harry did not stay too long and one other

club member arrived, whose name and call sign escapes me.

When we arrived at the clubrooms, a quick scout of the area showed that two of the club wire antennas needed attention. This turned it from a demonstration into a real life event. The 40-metre and the 80-metre dipoles had come down at some point earlier. They had been temporarily put back up but were not orientated correctly and were lying over the telephone line.

Ross VK3HBS managed to find the anchoring ropes and lower the wires. It was noted that the 80-metre dipole did not have an insulator on the end. As we did not have one handy, the antenna was installed without one. This will need attention in due course.

With the wires down and inspected for damage, it was time to get a line over the trees. The wind was blowing quite a gale, which made for interesting attempts. To improve the chance of getting the line over the tree, a suitable length was laid out on the ground so it would reduce the friction. It took several attempts to get these lines over the correct branches because of the wind. In the end we achieved the two lines over the trees.

The next step was to get the high visibility line over without snagging. The tricks and traps of such move were quickly worked out and all was done without incident.

Once again Ross demonstrated his Cub Scout knot tying skills, attaching the ropes to the wire antennas. It took a few eyes on the ground to estimate the movement of the trees in the wind and how much slack was needed in the antenna wires.

Once the ropes were secured a discussion ensued of which rope is better for each step. Some ropes are difficult to tie but slide over the branches with ease. Others are too heavy to be used to launch the initial line. There are those that are light enough to get over the trees but are not UV stable or strong enough to hold the weight of an antenna.

Of course, with any installation the cost and length of planned installation need to be taken into account. If you are in the bush and need a quick and nasty job, there is no need to take wind into account, whilst at home this is a concern.

If there is enough interest we can plan another event like it. As with any club event it is the support of the membership that decides whether to have another. Thank you to all the participants who make it possible.

Andrew Kayton VK3KIS **ar**

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

It is at the start of the 3rd quarter that our annual general meeting is held each year. The main office bearers elected were: President John Silver VK3LJS, Vice President Keith Vriens VK3AFI, Secretary Keith Stickland VK3XKS, Treasurer John Collins VK3TKH.

We have a small group who like to operate portable out in the field. This group led by Albert VK3EFO and Neil VK3XNH set up a station for the International Lighthouse and Lightship weekend.

As in other years, the station was at Split Point lighthouse at Aireys Inlet on the picturesque Great Ocean Road. Operation was from a caravan at the base of the lighthouse and used a G5RV antenna suspended from the top of the lighthouse. The day was overcast and very cold, however many contacts were made, particularly on 40 m, and there was a lot of interest shown in the station by members of the public.

Most of our members are also active WICEN members. Neil VK3XNH gave an interesting demonstration of a simple tracking program that has been developed for WICEN use. Operators at check points input details of competitors in an event as they pass a check point. Information is then passed on to all other check points including a master control. The mode used is packet radio, and as the software is DOS based, it will run on older computers using either DOS or older Windows operating systems. The club has recently acquired a number of older laptop computers. It is envisaged that these will be used in future WICEN exercises.

We have had two presentations that were designed to assist our less experienced members who wanted to construct equipment but who lacked experience with test equipment. The first was by Pip VK3YME on the subject of oscilloscopes. Pip explained in detail what each control on the front panel was for, and how to adjust the control.

Another presentation was by Rod VK3AYQ on the practical uses of a dip meter. This not only included the measurement of the resonant frequency of parallel tuned circuits, but also measurement of capacitance, inductance, velocity factor of coaxial cable, length of coaxial quarter and half wave stubs, resonant frequency of antennas and crystals.

Another interesting project undertaken by members was the construction of tone boards to generate CTCSS tones. This project was designed and developed by Pip VK3YME. As many of our repeaters require tone access, operation through them is not possible using older FM transceivers. The circuit uses a PIC microcontroller to generate the tones.

This project proved to be most popular and will be followed up at a later date by a smaller version using SMD components so that it can be incorporated into a microphone enclosure.

Our mid week group continues to meet each Wednesday morning. They have just completed the construction of new shelving in our store room.

Visitors to Geelong are invited to attend our regular Thursday evening meetings held at 8 pm local time each week at 237A High St. Belmont. Or, if in Geelong of a weekend, call in and see our museum at the Old Geelong Gaol. The Gaol is situated in Myers St, not far from the CBD and is open each Saturday and Sunday. **ar**

Silent Key

Dick Hammant VK3NDC - SK.

On Wednesday 17 September, Richard (Dick) Hammant VK3NDC, aged 78, lost his battle with bowel cancer. Dick was diagnosed in April this year. Dick was a member of the EMDRC and was a regular on the Sunday morning nets.

His regular interactions with net controller Carl VK3EMF on the virtues of tomatoes and other gardening matters was a source of great amusement to net participants. Dick will be fondly remembered as an enthusiastic amateur. He leaves behind a loving family.

News from

VK6

Keith Bainbridge VK6XH

News is a bit thin on the ground this month, despite requests to local clubs and groups.

The big news is the launch of D-STAR in WA. It all happened on 18th October at the RSL Hall in Kalamunda. It was attended by the WIA President Michael Owen, representatives of Icom Australia and Icom Japan, as well as the local organisers responsible for making the project a success. As I write this the event has not as yet happened, so look elsewhere in the magazine for a full report of the launch. This launch also presented the opportunity for the Advisory Committee to meet with the WIA President and to keep up to date with national matters.

JOTA/JOTI will have come and gone on the same weekend, hopefully with great success. More on this event next month.

The NCRG contest team set off with reduced numbers for Muresk Agricultural College on the weekend of the 4/5th October for the Oceania DX Contest and a great time was had by all. A similar setup to that pictured in last months column was erected and although band conditions were not exactly fantastic, many contacts on all the lower bands were achieved. Hopefully enough to bring the Multi-Single 1st prize back to WA once again.

Sunday 28th September was a momentous occasion when the NCRG premises in Whiteman Park were honoured by the presence of a trio of radio amateurs with enough years behind them to equal most records!

Wally VK6WG, Percy VK6DD and Ron VK6RG graced the club with their attendance. Between the three of them are almost 150 years of licensed amateur radio activities. The group included Doug VK6TDC who brought them along, Neil VK6NE the former WIA President and yours truly. Gerald VK6XI and Wayne VK6EH, the NCRG President, make up the group. So many years of AR experience and the youngest is 55. Where are the youth!

I would really appreciate feedback and input from the various groups around the state if you all want this column to continue. I am sure lots of interesting things are happening in the Repeater group, the VHF Group and others so please let me know and I will pass it on to others around the State.

The NCRG has been lucky enough to win one of the grants from the WIA to start the ball rolling on the VK6-ZS Beacon project. The idea is simple, set up a 2 metre beacon, point some antennas to South Africa and Reunion Island and hope for the best.

Not quite that easy, I am afraid. The beacon will transmit using one of the WSJT modes and will be linked either to the club's 70 cm repeater or to an Internet link to alert possible listeners to the beacons reception in ZS or places west. Then it will be a mad scramble out to Whiteman Park to try for a possible active contact with the 'other side'.

I have said previously that this is an extremely difficult path to get a signal across but the Hepburn Charts do show many times during the year when propagation is possible. If you do not try it will never happen, and we can be very trying!

So the grant will help set up the initial antenna array, phasing harnesses, transmitter and so on then as more of the right people get involved, the PC control and a dedicated beacon transmitter and separate receiver will be installed. This will be based on designs in use by the GB3VHF beacon in the UK and hopefully with the added assistance of the WA VHF Groups sub-group who are actively developing some very interesting beacon projects. More on the VK6RIO (Indian Ocean) project as it unfolds.

That is it for this month, I am afraid, so a last call for input or this column will become the NCRG report and not the VK6 report. And I know there are those out there who do not want to see that happen!

73 and hopefully the Sun will find a spot for you this month.

ar

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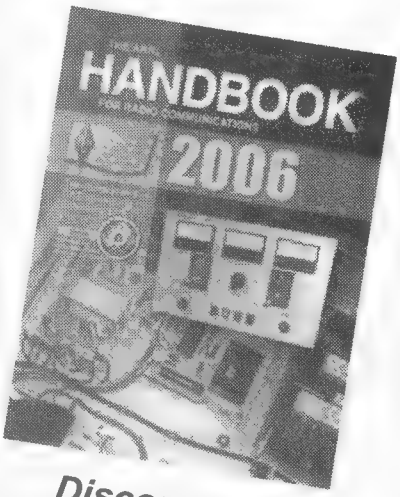

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News from

VK5

Adelaide Hills Amateur Radio Society

The September meeting of AHARS was a talk by Sasi VK5SN on his involvement with the Sea Rescue Squadron. Sasi is Radio Officer and Radio Instructor (MROCP and SA-GRN) for the Squadron. Sasi presented an excellent insight into the operations of the Squadron.

After supper and before the business proceedings, John Dawes VK5BJE, in his role as WICEN secretary, presented several club members with thank you certificates for their involvement in Rally SA. Members were encouraged to help out with the Classic Adelaide Car Rally to be held over four days in November.

Saturday September 27th saw about 25 members of the club make a visit to the West Beach Sea Rescue Squadron site. Boats in use were the envy of all. The service is run by a dedicated group of volunteers. A bonus for the day was the arrival overhead of the Qantas A380 Airbus as we concluded the visit.

The Club annual Buy and Sell will be held on Sunday November 9th at the Goodwood Community centre, Rosa St, Goodwood. This is an event for all VK5 amateurs and other interested people. Entry to buyers is at 9.30 am. Excellent door prizes will have been donated. Several commercial vendors will be in attendance, along with the usual flea market, food by the ALARA ladies and a BBQ by NERC. Icom will launch the Adelaide D-STAR repeater, which has been an ongoing project of the Amateur Radio Experimenters Group, with financial support from some local clubs.

AHARS will be hosting a Foundation licence training weekend on December 13th and 14th. The venue is the Aviation Museum, Lipson St, Port Adelaide. Sasi Nayar VK5SN is the contact, his phone number is 0417 858 547.

The end of year lunch will be held at the Mt Osmond Golf Club on December 7th. Interested members please contact one of the committee.

Rescue 01. L-R: Alan VK5AR, XYL Helen, Ron VK5RV, John VK5EMI (Club President), Peter VK5APR, Denis VK5FHHH.

Inside the mobile communications van. L-R: (Back of) John VK5TD, John VK5KJJ, Mark VK5AVQ

Christine Taylor, the usual contributor, has been in Tasmania for the ALARA meet and then to South Africa for another ALARA meet.

73 David VK5KC.

ar

News from VK7

Justin Giles-Clark VK7TW
Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

ATV Record Holders

A significant meeting happened quietly at the ALARA meet back in September. Winston VK7EM met with Peter VK3RV, who was with Jenny VK5ANW. Peter and Winston set the National 70 cm ATV record of 413 km. Peter was VK3ZPA at the time and this was set on 13 December 1972 and it still stands. It was great to hear Peter and Winston talk about the construction of the ATV equipment which was all homebrewed. Congratulations on this long standing achievement.

Remembrance Day Congratulations

Congratulations to Laurence VK7ZE for winning the HF Single Operator Phone section with 1002 points and Martin VK7GN for winning the HF Single Operator Open section with 835 points and congratulations to all VK7 amateurs who participated.

VK7 Hamfest

The Central Highlands Amateur Radio Club of Tasmania (CHARCT) sponsors the major VK7 Ham Fest every two years and it is only a month away. It starts at 10 am on Saturday 6th of December at the community centre at Miena alongside the Great Lake in central Tassie. See you there.

Northern Tasmania Amateur Radio Club

NTARC's September meeting drew a record attendance for an 'antenna technical' evening. Al VK7AN covered the G5RV, Daniel VK7DA covered a great phased dipole UHF array for ATV activities, and Norm VK7AC covered a PC logging program.

Rumour has it that VK7FLI, Flinders Island will be activated for IOTA under the capable direction of Peter VK7KPB, Al VK7AN and Barry VK7BE shortly, so stay tuned.

Anyone interested in examinations for Foundation, Standard or Advanced in the North then please get in touch with Al VK7AN 0417 354 410 for more information.

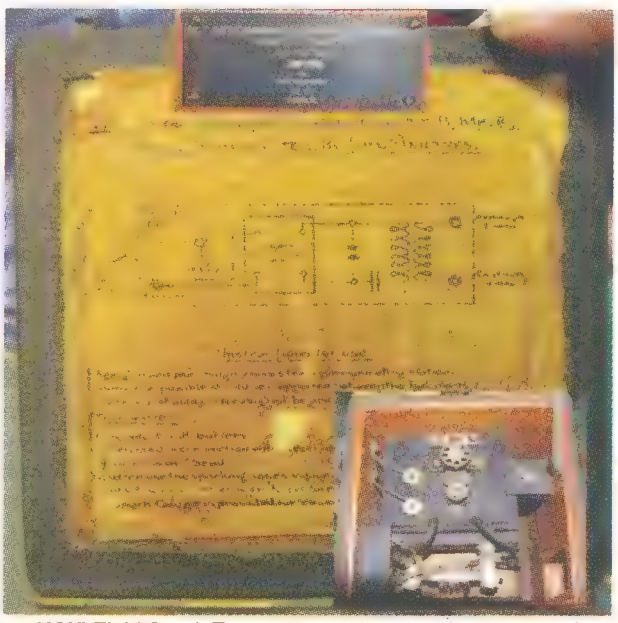
Radio and Electronics Association of Southern Tasmania

REAST's October presentation was a talk from Dave VK7DM on his 20 year journey building a modular linear amplifier system for 160 m through to 70 cm. Dave started with the common power supply unit and standard chassis and then went through some of the theory of linear amplifiers and then described the 160 m amplifier using paralleled 6146 tubes and ending with the 70 cm amplifier using a ceramic 2C39 "lighthouse" tube. Thanks to Dave for a fascinating talk on some excellent homebrewing.

The REAST ATV Experimenters Nights happen each Wednesday night and saw a great interview with Dave VK4AO who is the vice-president of the Gold Coast Amateur Radio Club. Each ATV night can be anything from live presentations, interviews, historic radio related films, segments of interest, training and many other topics that take our fancy.

Continued at foot of next page

Winston VK7EM and Peter VK3RV



WWI Field Spark Transmitter – Historical Equipment of VK7AG (SK) from VK7ZAL's Collection at a recent ATV night.

News from

Christopher Comollattie VK4VKR

Hello from VK4, the sunshine state, good one day, greater the next. I am Chris VK4VKR from Glendale, which is located 20 km north of Rockhampton and I have taken on the role of VK4 editor. I strive to supply readable, reliable and responsible news from VK4, so here goes.

Central Highlands AGM Results

The Central Highlands Amateur Radio Club AGM Weekend for 2008 has been and gone with everyone attending proclaiming the weekend to be an outstanding success!

Held during the weekend of September 20th and 21st, hams and their support crews from far and wide made a beeline for Camp Fairbairn near Emerald to meet up with old acquaintances, make new ones and support the small yet mighty Central Highlands Amateur Radio Club in its once a year fund raising event.

Most who attended arrived by Saturday afternoon in near perfect weather conditions and claimed their bunk and eating place for the night. They met up with the very keen ones who had arrived on Friday evening and claimed the best of the spots! As the sun went down, the chin-wagging and rag-chewing increased in rate and were only silenced a bit during the fantastic CHARC BBQ with the CHARC Ladies Team wielding mean tongs and spatulas to turn out gourmet food at a fast rate. The OG on the hotplate went okay, too, and did not spoil the high quality meat products supplied by Springsure Butchers. Those who had room were also able to partake in palate pleasing desserts.

The Annual General Meeting was a relaxed affair but plenty of work got done quickly. Mark VK4KMR chaired the meeting and firstly called for a minute's silence in respect for those hams in the region who had passed away during the year. Respect was given to Wally Douglas VK4AIV from Marian, Gus Angus VK4NRA from Calen and Don Blanch VK4ZFB from Biloela.

Mark then gave a report on CHARC activities during 2008, informing about the improvements and expansions made to the Central Highlands repeater and APRS network. Highlights included linking to Rockhampton and Sarina repeaters, along with the Midge Point APRS Digipeater being established and working well.

Some club members were also singled out for special mention, with Steve VK4SMW, Roy VK4YRO and Mick VK4HOG being congratulated for providing technical support beyond the call, and Gordon Loveday VK4KAL and Dorothy Loveday being elected Life Members of CHARC for the years of secretarial and treasury duties they have performed for the club.

Mark also thanked all those members who did not actually live in the Central Highlands for their ongoing support and participation in keeping a mighty little club alive. Mark then declared all positions on committee vacant. Another lifer, Geoff VK4GI, was called upon

continued next page

VK7

continued from page 35

A big thank you to Robert Milne VK7ZAL for a very generous donation of his immaculately constructed ATV gear for 70 cm, 23 cm and 13 cm. ATV nights happen from around 7:30 pm and signals go out on 444.25 MHz, UHF just below SBS in Hobart.

North West Tasmania Amateur Radio Interest Group

NWTARIG met on Saturday September 20 and Dave VK4AO and Yvonne VK4FLUV from the Gold Coast ARC were welcome guests. Please note that the SSTV facility on the 2 m Mt. Duncan Repeater VK7RMD has been moved to the local simplex frequency of 147.425 MHz and shares the channel with the EchoLink VK7AX-L Node 100478 known as "ATV, SSTV & Chat Conference". Thanks to Winston VK7EM and Vernon VK7VF for their recent treks up Mt Duncan to replace a faulty repeater.

The Radio Experimenters and Social Group met on Saturday October 4 with some new faces in Mike VK7KMH, Dick VK7FORF and David VK7ZDJ who brought along photos of the commissioning of the Mt Duncan repeater site a long time ago! The group decided to hold a radio net each Tuesday night at 8 pm using the 2 metre repeater VK7RNW at Lonah. All are welcome to join in.

SILENT KEY

Ed Terrazzi VK7JET – SK

I regret to advise of the death of Ed Terrazzi VK7JET.

Ed was born in the USA and served in the US Navy during the Vietnam War. After his discharge, he settled in Tasmania and became interested in CB radio around 1980.

Ed suffered from multiple sclerosis and fifteen years ago would arrive at the amateur radio class at the Domain in his wheelchair. He obtained his Novice licence, having the call VK7NET, and later VK7JET, from locations in Glenorchy, Franklin and Compton Downs.

Ed was a life member of the ARRL, but in recent years his disability limited his use of radio.

Vale Ed. Submitted by Ric VK7RO

VK4 *continued from page 36*

to conduct the election of the 2009 Committee, with the results being:
President
Steve Wood VK4SMW
Treasurer/Secretary
Gordon Loveday VK4AGZ
and Dorothy Loveday
Vice President
Mark Robinson VK4KMR
Committee Members
Ron Moore VK4YRO
Harry Cox VK4LE
Rob Waegele VK4TWR
Publicity Officer
Helen Wood
Technical Officer
Steve Wood VK4SMW

The Raffles were then drawn by President Steve with the results:
GME TX630 Handheld
Roy Moore VK4YRO
Probe Multimeter
Chris Comollattie VK4VKR
A thing worth more than $7.50 in a brown paper parcel
Dave Wilson VK4UN

Steve thanked Mary VK4PZ and Helen Wood for being the ticket ladies and also thanked Samuel Robinson and Michelle Waegele for the good scrunching job they did to the tickets. The Monster Auction then proceeded with Bill VK4XZ enticing the crowd to pay up for some real monster pieces of equipment whilst Gavin VK4ZZ acted as auction scribe and Samuel Robinson, Michelle Waegele and a few others in the crowd acted as bid spotters. A note to anyone else thinking of organising a monster auction - the artefacts of food made by the Ladies Group fetched as much as the monster equipment did, with big jars of Anzac Bikkies (which seemed to be a favourite of Clive VK4ACC), Oatmeal cookies, lucky dips and slabs of home-made fruit cake.

With the show finished and many of the group having travelled long distances during the day, personal power cells were rapidly dwindling, so the throng made it a night and went off to count stars, sheep or integrated circuits.

Sunday was wake-up time to the lovely aromas of the Recovery Breakfast! The Dynamic Duo - Gavin VK4ZZ and Clive VK4ACC suitably supervised by the CHARC Ladies and master cook Frank VK4CAU - whipped up oodles of mouth-watering edibles which ensured quick business and clean plates. Tidying, sweeping, packing and farewells soon followed and the group wended their individual ways either homeward or onward to other spots to visit. Forty four people recorded their names on the attendance list: if you were not there, you missed out on a fantastic weekend!

Townsville Amateur Radio Club

TARC goes to the Theatre Restaurant

Saturday 1st November saw the annual visit by members and friends of TARC to the Townsville Choral and Orchestral Society's famous Theatre Restaurant. Hopefully we will have a report in the next issue.

Whispers On The Ether:

TARCadians on the High Seas.
These HAMS are currently at sea and sending position data by WinLink which eventually ends up in the APRS.

VK4HBV David onboard *Sahula* northbound - last report 03 Sept. 2008 1509 UTC, 0829S 11952E. In port Labuahn Bajo, Flores, Komodo Island, Indonesia.

VK4FUU Ashley and Brenda onboard *Ashymakaihken* - last report 22 September 2008 2012 UTC, 22.22.97S 166.54.90E 50 km SE Noumea. Anchored at Prony Bay, with good walking trails.

Get well soon Trevor VK4ZFC.

Get well soon greetings go out to Trevor VK4ZFC, former president of TREC and currently a day visitor at the Douglas Hilton for the next few weeks. You will hear Trevor pop up occasionally on the Townsville VHF Repeater. Do not be shy and say "g'day" to Trevor.

WICEN

WICEN Queensland holds a net every Sunday on 7075 kHz from 0830 (2230 UTC). The net calls in regular stations and then invites new stations to call in. Mix it with other WICEN ops and call in on the net!!

Rockhampton & District ARC

The RADAR annual dinner will be on Friday 28th November from 6.30 pm at Rockhampton Rubgy League Club.

Many thanks to those who emailed me with stories and pictures I am very sorry that no pictures were added this time around, sorry about that, but do not despair. Next time more details and pictures will be added. Keep up the good work. So thanking you for reading and till next time, Cheers! Also do not forget that I NEED YOUR STORIES AND PICS, please forward to: vk4vkr@wia.org.au or qtc@wia.org.au

Tablelands Radio and Electronics Inc

A new presidential year finds John VK4TL in the presidential seat once again, Dale VK4DMC as secretary, and Ron VK4EMF as treasurer.

Tto say hello to the Tablelands Radio and Electronics Club, tune to 3588 at 7.00 pm local time and do not forget the VHF/UHF Spring Field Day November 15/16th. Sunday 23rd November sees a Foxhunt followed by sausage sizzle.

P29 DXpedition operator vacancy

The P29 DXpedition activating P2 IOTAs and on 160 has an opening for an operator. Hugh K6HFA is graciously leaving his $3000 (AUD) in the boat charter fund.

Would you like to replace Hugh? For $2067 (AUD) plus your air fare, you can. If you are interested, be quick and contact Derek G3KHZ at G3KHZ@derekcox.plus.com or Skip W5GAI at W5GAI@arrl.net. Chance of a lifetime!

BARC

In Bundy ... the past meets the present..... and it is tuning up nicely.

There is news from **Bundaberg Amateur Radio Club** regarding their recent AGM and election of office-bearers. It seems that one John (Rusty) McGrath VK4JM has been elected President for the 2008/09 year, bringing full-circle the history of that club.

It was Rusty along with 11 others who, in September 1961, met to form the Bundaberg Club. The group had petitioned the WIA Queensland and received permission to form, and subscriptions were set at one Pound per year.

This past AGM saw another important milestone in amateur radio in the region. Two Foundation calls became committee members: Margaret VK4FHAM took on the Treasurer's role and Kev VK4FKEV will serve on the committee in a maintenance role.

This represents a well rounded outlook

for the group, with the history and solid past of the club well represented but new fresh members in radio being prepared to step up and take responsibility in different areas of club administration. It certainly augers well for the next 47 years for Bundy as Rusty outlined his vision for the new year and in particular the formation of Working Parties.

With leaders in each area utilizing the skills of ordinary members and having them step up and assist, the future looks bright for the Bundaberg amateurs.

The new committee is:

President:
John (Rusty) McGrath VK4JM

Vice President:
Ross Orpin VK4JRO

Treasurer:
Margaret Beimers VK4FHAM

Secretary:
Gail Lidden-Sandford VK4ION

Committee:
Bob Wright VK4UD (outgoing President)
Joscelyn McGrath VK4JJ (a founding member and a past president)
Anske Beimers VK4FCAB (outgoing Treasurer) and
Kevin Sullivan VK4FKEV

More information on the BARC can be found at www.barc.asn.au

Brisbane Area WICEN and the Tom Quilty 2008

Brisbane Area WICEN Group Inc. has for many years been involved with communication for horse endurance rides. At a recent ride at Imbil, Barbara and Colleen from the Nanango Heritage Endurance Riders Association (NHERA) asked me to handle communications for the upcoming *"Tom Quilty Gold Cup"*. This is Australia's most prestigious horse endurance ride, held at Nanango in Queensland's South Burnett region on Saturday 20th September 2008. Communications were required for rider tracking as well as for handling calls for assistance from the riders and reporting on track conditions and water supplies.

This event was at very short notice and an answer was required ASAP. David VK4DCG answered YES! This also meant that he was the organizer! A call for volunteers was encouragingly successful, things were looking good.

NHERA negotiations on the route and access continued and late July saw check points confirmed. The ride would have six legs, with 17 check points. Now the serious work could start.

The ride was in the East Nanango and Din Din State Forests, tough country but "Radio Mobile" confirmed that a two metre repeater on Treeby's Hill (luckily also a check point) provided good coverage into the forests and to the Nanango base. A field trip in mid August confirmed this. By now, the volunteer list had grown to 19: just enough to cover the 17 check points and the Ride Base.

David's wife Shirley VK4HSG and David VK4DCG with Al VK4AL set up camp at Nanango on Wednesday 17th, verified all the checkpoint locations and communications on Thursday 18th and set up the Ride Base on Friday 19th. Volunteers started arriving on Friday afternoon in time for a pre-ride briefing on Friday night. As the ride start was at 0400 on Saturday 20th, an early night was the rule. 0300 saw all volunteers in place with communications checked. The first hurdle was overcome, no one got lost. Volunteers, given the sketchy route instructions, I applaud your navigation skills (and use of the GPS).

The ride start at the Nanango Ride Base was something that had to be seen to be appreciated! 210 horses and riders, fresh and eager, crowding through the start, all at once. An announcement to all stations that riders were on the way warned the first check point to be ready. At 0445, 210 riders descended on the first check point, manned by Bruce VK4EHT, Gary VK4CUZ and Shirley VK4HSG. Top work, all riders checked and numbers relayed to base.

From here, the field started to stretch out, not quite so frantic at the following checkpoints, and on to the "Away Base" manned by Simon VK4TSC and Bill VK4NBP. The ride snaked through the East Nanango State Forest, back to Ride Base at the Nanango show grounds.

All went well until about 2100 when a violent electrical/hail storm shut down all communications. To the field operators, a magnificent effort continuing to man check points and record the rider numbers of those competitors still on the track, some riding on while the storm was raging.

The storm passed at about 2145, communications were re-established and all information was relayed to Base. With the storm delay, the organizers extended the nominal 0400 Sunday finish, the last check point closed at 0500, the last rider coming home at 0515.

The final tally was: 27 hours of continuous operation for the Base and for most field operators, an endurance event not only participants but for radio

COFFS HARBOUR RADIO EXPO

Hosted by the Mid North Coast Amateur Radio Group*

SUNDAY 20TH JANUARY 2008

ST JOHNS CHURCH HALL,

MCLEAN STREET, COFFS HARBOUR

8.30AM START

Trade Displays, Disposals, Door Prizes, Club Displays, Home Brew Displays, Satellite Tracking, Tower Displays

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GARY RYAN VK2ZKT 02 6655 2990

operators as well. Extreme weather conditions did not stop the checkpoint operators. All riders were successfully tracked and all messages for assistance were handled promptly. No equipment failures were encountered. Extreme satisfaction from the event organizers on the operators' abilities and the quality of communications provided.

This effort is a tribute to the field operators, their WICEN training proving once again that amateur radio can deliver the goods.

Many thanks to the "Quilty Mob", being: Shirley VK4HSG, Simon VK4TSC, Matthew VK4MAT, Bill VK4NBP, Gary C VK4CUZ, Brian VK4XS, Tom VK4TY and Syris, Gary B VK4ZGB and Tricia, Al VK4AL, Bruce VK4EHT, Ross VK4WRC, Miles VK4FUST, Robert VK4HBW and John VK4IE. Also Tim and Denis, not yet licensed but working on it, aren't you? Lastly, Zac the wonder dog. Without his conversations during the early hours, none of this could have happened!

David Gulley VK4DCG
(Brisbane Area WICEN secretary, now retired from organizing "Quilties").

The Brisbane Area WICEN web site at www.qdg.org.au has photos, and for more on the Tom Quilty Gold Cup, visit www.tomquilty2008nanango.com/ and http://nanangoenduranceriders.com/ **ar**

Silent Key

Lawrence Blagbrough VK4ZGL – SK

Lawrence Blagbrough, a life member of the WIA, passed on in hospital at Toowoomba on 20 June 2008, aged 88.

Lawrence commenced his career with the Royal Navy at a site evaluating new equipment. He then moved from the UK to RNHQ in Sydney and then to a new RN depot in Brisbane. Married to a local girl, after retirement he held various posts in Brisbane including one at the University of Queensland.

Lawrence took most interest in WIA administration and computers rather than operating and gave the Institute worthwhile help.

In Toowoomba, Lawrence took part in many local activities, as librarian, educator and others, including Toast Master.

Submitted by Peter VK4PJ. **ar**

Spotlight on SWLing

Robin L. Harwood VK7RH

Well, the major seasonal changeover happened on October 26th at 0100. You have probably already noticed a sharp decline in the number of international broadcasters on shortwave.

Radio Netherlands has dropped English language broadcasts to North America on HF and probably to Oceania as well, although Dutch language programming continues. Radio Taiwan International from Taipei has also discontinued targeting North America and Europe and has not been broadcasting to Australasia for a while.

This means that the Family Radio senders in Florida will now be broadcasting other programs. Family Radio used to be relayed from Taiwan but have now been using the worldwide VT senders. The Taiwan senders are ageing and no longer have the punch needed, especially to combat the ever increasing "Firedrake" jamming. The latter has always concentrated on disrupting programming from there ever since the Kuomintang fled to Formosa, also known as Taiwan, in 1949.

The VOA has continued axing programming over shortwave despite the Georgian crisis with ramifications for Ukraine and the Baltic states. Domestic relays over FM in the CIS have been terminated following Russian pressure.

I wonder if the new US administration will reverse this or perhaps even institute further cutbacks. One candidate has vowed to cut back wasteful expenditure and the anti-Castro clandestine Radio Marti may fall into that category.

China is clearly dominating shortwave whether it is broadcasting or jamming other stations targeting the world's most populous nation. The "Firedrake" is so easily heard with its heavy modulation spreading over adjacent channels and with up to 10 channels on, for example, the 25 or 31 meter band, can severely disrupt the allocations.

I have also noted that smaller broadcasters, long buried under the international powerhouses, are increasingly becoming audible, particularly outlets from South America, including Brazil. For some reason, signals from Brazil have been extremely rare here and I have only worked one Brazilian amateur station in my life. Yes, I have heard Brazilian stations from the Globaltuners website but that is not the same as hearing them direct.

The Radio St. Helena transmission will go ahead on November 15th between 2000 and 2345. They will be on 11092.5 and a test transmission early in October was observed in India, Japan, Europe and North America, although weakly in the latter. Nothing was heard here and as they are targeting only Japan, Europe and North America, I do not expect to hear any direct signals but will "cheat" via the web.

Well that is all for this month. You can email vk7rh@wia.org.au with any news or comments.

De VK7RH.

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"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the

Radio Amateurs Old Timers Club Australia

or if you have been licensed for **less than 25 but more than ten years**, you are invited to become an **Associate Member** of the RAOTC.

In either case a **$5.00** joining fee plus **$8.00** for one year or **$15.00** for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to
RAOTC,
PO Box 107
Mentone VIC 3194
or call Derek VK3XY on **03 9563 6909** or Bill VK3BR on **03 9584 9512**,
or email to raotc@raotc.org.au
for an application form.

ALARA

Christine Taylor VK5CTY

The ALARAMEET in Ulverstone

The 80 or so people who attended the ALARAMEET had a great time. Everything was well organised including some last minute changes in accommodating the weather, which was not quite as kind as it could have been.

A number of us arrived a day or two before the beginning of the Meet. Some arrived on the Saturday morning. Everyone who needed to be met was met, and two metres was a help to guide in a few who got slightly lost.

The caravanners were all located near each other and not far from the cabins we had booked, so everyone soon knew where everyone else was. It was not difficult to have 15 or 20 people crowded into one of the cabins "meeting" each other. Two motels were also booked through Susan and the ones in these soon knew who was in which room so all round we had the opportunity to meet new and old friends.

Several of the ZL YLs were delighted to have an eyeball contact with their sponsors for the first time. Cheryl N0WBV and her OM John KT0F were on their first visit to Australia so they were interested in everything. Cheryl had been President of YLRL and had hosted one of their MEETS not long ago. She was amazed at the number of people who attend our MEETS. In the US they rarely have so many attendees. I suspect it is the Australian habit of travelling across our wide brown land in our caravans that makes it so "normal" to include an ALARAMEET in our plans. I am sure our moderate weather has something to do with it, too.

The Saturday morning was occupied with registration and chit-chat. After

ALARA members present at ALARAMeet 2008

Back row: Pam VK3NK, Jenny VK5ANW, Jean VK3VIP, Yvonne VK4FLUV, Susan VK7LUV, Catherine VK4VCH, Dot VK2DB, Pat VK3OZ, Mary Rodgers.

3rd row: Jeanne VK5JQ, Bev VK6DE, Susan VK3FXXX, Rosanne VK7NAW, Muriel May, Val VK4VR, Pam VK4PTO, Margaret VK3FMAB, Margaret Loft, Cathy ZLADK, Sharron ZL3AE

2nd row: Mary VK5AMD, Myrna VK5YW, Maree VK3FSAT, Nancy Karas VK7BYL, Cheryl N0WVB, Ann VK4ANN, Daralyn, Shortland, Tina VK5TMC

Front row: Christine VK5CTY, Shirley VK7HSC, Joline ZL1UJB, Lynette ZL1LL Marilyn VK3DMS, Jenny VK5FJAY, Alison ZL1TXQ, Leslie VK5HLS, Meg VK5YG,

morning tea, all the group photos were taken. We like to have a record of the groups that have sponsors with other YLs so the photos can take a while.

The official opening started with a special video welcome by Joy VK7YL. Quite by chance Joy had got in touch with Justin VK7TW, just a week or so earlier, offering REAST some early QSL cards etc.

Joy has been an amateur since the 1930s and gave Justin a 45 minute interview, of which he showed us five minutes of Joy welcoming us to the ALARAMEET. As Justin was leaving Joy, she confessed that that day was her 93rd birthday!! WOW, she is certainly 93 years young. I believe the whole of the interview with Joy will have been 'aired' in one of the Sunday morning broadcasts by the time you read this. It was an exciting bonus for everyone to start he official ALARAMEET like that. Thank you Joy and we all wish you well.

After lunch we were taken to the "Axeman's Hall of Fame" to see pictures and memorabilia of the many axemen from Tasmania who have competed at the Shows around the country. Those of us who enjoy watching the axeman competitions recognised some of the names and faces. There was also a most interesting collection of wooden craft objects on display or for purchase.

Saturday evening saw the formal dinner at the Bass and Flinders Motel; a good time was again had by all.

The next morning we were taken to the Trowenna Wildlife Park where we had an opportunity to hold or stroke a koala (from Victoria), a wombat and a Tassie Devil.

After a very substantial meal at the Sheffield RSL, we had time to view and photograph the marvellous murals painted on the walls of many of the buildings. What a great idea!

Proceedings concluded with the drawing of the Special Effort prize, when Hans VK5YX was delighted to win the Icom handheld. Then the ALARA flag was folded and presented to Pam VK4PTO, the next convener of an ALARAMEET. This will be held on the Gold Coast in 2011.

On the Monday, for those able to stay a little longer, there was a bus tour to a platypus and echidna house where we could get up close and personal to these strange animals. Lunch was at Cataract Gorge with time for the most intrepid to do a half hour walk up the cataract. The day concluded with a visit to the Queen Victoria Museum and Art Gallery, where there was something for everyone.

For the next couple of weeks there were voices on two metres and SMS messages flying around as the many travellers exchanged news as they visited many of Tasmania's tourist destinations. No doubt there were also stories on the Traveller's Net through which you have been able to follow people.

When there is an ALARAMEET anywhere you can be sure some of us will stay on afterwards to take the opportunity to see new places.

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28th ALARA CONTEST 30/31 August, 2008

A very disappointing year, even though the bands were reasonable. I suspect that the impending ALARAMEET (which was held just two weeks later) meant that many were already on the road, or in the middle of preparations for travel. As usual there were those heard on air with good numbers who failed to send in a log. Most of the logs arrived by email which made my job easy, as I also went to Tasmania for ALARAMEET.

Congratulations to Lesley VK5HLS who made such a wonderful score and to Rosanne VK7NAW, not far behind. I think there was some friendly rivalry there. It probably came down to whoever had the least sleep, hi! I believe that Lesley's OM Hans VK5YX was housemaid for the weekend. Congratulations also to Leonie VK2FHRK who is our top Foundation licensee for 2008. Another Foundation licensee, Ann VK6FAVB, though not an ALARA member, ably represented VK6. Gerald VK2HGB has taken out the top OM for the 3rd year in a row.

Mention must also be made of Sharron ZL3AE who not only had a great score but also worked a creditable CW score of 52. Well done Sharron! Our top score in VK3 goes to Muriel, who worked the contest under the supervision of her OM Niel VK3KNM. Muriel does not have her licence as she has health problems, but is willing to take part.

So now we must look forward to 2009 and another contest. Thanks to those OMs who supported the girls – we hope you will all be there again next year. So mark the last full weekend of August – 29/30 – for the 29th ALARA Contest. See you there!

33 Marilyn VK3DMS **ar**

Results

Lesley VK5HLS	1033	Top overall, Top phone, Top VK5 ALARA member
Rosanne VK7NAW	31	Top VK7 ALARA member
Catherine VK4VCH	60	Top VK4 ALARA member
Muriel VK3KNM/2nd op.	14	Top VK3 ALARA member
Gerald VK2HBG	33	Top VK OM
Sharron ZL3AE	26	Top DX YL, Top DX CW, Top ZL ALARA member
Leonie VK2FHRK	91	Top VK2 ALARA m'ber, Top Foundation Licencee
Pat VK3OZ	21	Top VK YL CW (CW score 94)
Chris VK2LCD	03	
Alan VK8AV	88	
Gwen VK3DYL	79	
Marisa VK3FMAR	71	
Marilyn VK3DMS	63	(Check log)
Christine VK5CTY	54	
Jenny VK5ANW/3	29	
Peter VK4FABC	08	
Celia ZL1ALK	03	
Kingsley VK5FKDT	9	
Ann VK6FAVB	0	Top VK non-member
Mavis VK3KS	0	(worked CW only)
Michael VK1XYZ	9	
Richard VK2KRM	9	
Dot VK2DB	1	
Graeme VK2MGM	0	

SUMMARY:

15 ALARA members (inc. 2 DX members); 1 non-member YL; 8 OMs.

VHF/UHF An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

We have had our first VK-ZL opening on 2 metres – very early in the season.

On the evening of September 26th at around 0845 Z, Bob ZL3TY at Greymouth on the west coast of the south island reported hearing the Newcastle Channel 5A sound carrier on 143.776 MHz. Steve VK2ZT at Medowie just north of Newcastle began monitoring 144.1 and reported hearing weak CW, although he was suffering from a strong birdie on the frequency. At 0908 Z, they finally made an SSB contact with 5x1 reports each way over a path of 2012 km. Signals rose to S3 before they faded out.

Well done, and hopefully that is an indicator of a good season to come.

2 Metre Scramble

With the success of the VK3 144.150 net each Wednesday night, there has been wide support for the re-introduction of a regular 2 metre Scramble to promote further activity on the VHF bands. Mike VK3KH (ex-VK3AAK) has formulated a simple set of rules summarised below:

WHEN:

Last Sunday night of each month at 8.30 pm AEST (1030 UTC – 0930 UTC during Daylight Saving)

DURATION:

15 minutes only, with call back from 8.45 till 9.00 pm on 144.150 MHz

GENERAL RULES:

1. Work each station only once. Exchange will be RS report plus 4-digit Maidenhead locator.
2. Each month there will be a bonus station worth 2 points.
3. Operation will be between 144.110 and 144.200 on USB.
4. Power output is maximum 100 watts PEP

SCORING:

1. Each gridsquare worked will act as a multiplier.
2. Scoring will be: (number of QSO) x (number of grid squares worked)
3. The bonus station will count as two QSO.

BONUS STATION:

The winner each month will be the bonus station, and the callback controller, for the following month's scramble. They are excluded from winning in the month they are bonus station.

The first event is scheduled for Sunday 26th October.

Refer to the VK Logger Forums area for any late changes to the rules.

Aircraft Enhancement

Barry VK3BJM in Kyneton has been refining his Aircraft Enhancement techniques with the help of his ADS-B receiver. He reports on some recent activities:

This Monday morning (2042 Z, 5/10/08) when I fired up the ADS-B receiver the first aircraft that caught my eye was a QANTAS bird, flight QF565. Turns out this is a Sydney to Perth flight, of which there are six flights daily (with QANTAS, at least). I cannot recall having seen one on this track before, however, along which the aircraft was shown as having a bearing of 263 degrees (True) from over Canberra to the Bordertown waypoint, where it converges with the Melbourne-Adelaide track before heading out over the Coorong and the ocean. This track is designated J142 on ERC H3 (air traffic chart, High #3).

Helpfully (!) this morning there was very little by the way of troposcatter signal from the VK3RRU 2 m beacon at Mildura, and the VK5VF 2 m beacon on Mt Lofty was inaudible.

At 2044 Z the aircraft was 93.7 nautical miles (173.5 km) from my QTH, and a heading of 313 degrees (True), at which point I lost visibility of it (about 25 km east of Warracknabeal, VIC). I listened to VK5VF for the next 10 minutes, and noted at 2047 Z a very faint fluttery signal start to appear. This was very brief, but at 2051 Z the beacon came up out of the noise at 419 for about a minute, during which time there was no QSB. The aircraft was cruising at 40,025 feet at the time it was visible to my ADS-B receiver.

I was still in the shack, after the usual "AE Alley" on 144.200, at 2230 Z when I noticed the second Sydney-Perth flight for the morning (QF575) appear on the screen near Culcairn, NSW. It was also cruising at 40,025 feet. I prepared to take notes...

VK3RRU is at 388 km and 328 degrees from my QTH; VK5VF is at 571 km and 294 degrees. I listened, firstly for VK3RRU then VK5VF, over the next 25 minutes, and my observations are as follows:

2246:50 Z: QF575 due north of VK3BJM

2248:48 Z: QF575 @ 350° - VK3RRU 319 (troposcatter level)

2250:50 Z: QF575 @ 340° - VK3RRU 319

2251:45 Z: QF575 @ 335° - VK3RRU rest period (no key-down tail).

2252:20 Z: QF575 @ 333° - VK3RRU 319 with fast flutter.

2253:00 Z: QF575 @ 330° - VK3RRU rest period.

2253:30 Z: QF575 @ 328° - VK3RRU 539

2254:10 Z: QF575 @ 325° - VK3RRU 419

2254:50 Z: QF575 @ 324° - VK3RRU 319 with fast flutter.

2255:20 Z: QF575 @ 321° - VK3RRU 319 with fast flutter.

2256:10 Z: QF575 @ 320° - Temporarily lost radar visibility of aircraft. Shifted array, and receiver, from VK3RRU to VK5VF.

2256:35 Z: QF575 @ 316° - Aircraft reappeared.

2257:40 Z: QF575 @ 314° - Temporarily lost radar visibility of aircraft.

2258:35 Z: QF575 @ 310° - Aircraft reappeared. Still nil signal audible from VK5VF.

2300:35 Z: QF575 @ 304° - Still nil signal audible from VK5VF.

2302:00 Z: QF575 @ 304° - Temporarily lost radar visibility of aircraft (location 36.208 S, 142.547 E - again, close to Warracknabeal). Still nil signal audible from VK5VF.

2304:40 Z: QF575 @ 296° - Aircraft reappeared briefly - marginal signal with position update before data froze.

2305:00 Z: QF575 @ 296° - VK5VF

419 with fast flutter.

2305:25 Z: QF575 @ 296° - Lost radar visibility of aircraft. VK5VF 419 without flutter.

2307:00 Z VK5VF faded into the noise floor.

Perhaps one day I will have improved my ADS-B receive capability so that I can follow these aircraft past the convergence of their track and the VK5VF beam heading. My view to the WNW and W suffers from "Lumps" , like Patten's Hill at Drummond... However, it was interesting to see just how much inline the aircraft was before enhancement was observed on the signal from VK3RRU. If that beacon had a key-down tail of some sort, that could be viewed better, of course; but the beacon has power supply limitations, I believe, so there is nothing that can be done at present.

Addendum: In the shack just after 2000 Z Tuesday morning, and QF565 has just appeared on the screen, over Kyeamba Gap (halfway between Holbrook and Tarcutta, NSW). It took 30 minutes, flying at about 405 knots, to cross the VK3RRU heading; this time it enhanced the signal to 559 (background level 519 this morning) at 2035 Z. The aircraft is at about 150 km from my QTH when it crosses the beam heading - very close to halfway to VK3RRU. The aircraft was at 38,000 ft this morning.

The aircraft then enhanced the VK5VF beacon between 2044 Z and 2047 Z from inaudible to 419 - steady and without flutter for at least 60 seconds between 2045 Z and 2046 Z. The aircraft is at 250 km from my QTH when it crosses the VK5VF beam heading - it is 320 km from the Mt Lofty site.

I recall Gordon VK3EJ (ex-VK2ZAB) a few years ago asking via the VHF Reflector why AE is not used between Adelaide and Melbourne (M-A), the way it is between Melbourne and Canberra/ Sydney (M-S). I would suggest that the main reason is that the M-A flight paths are not situated as favourably as the M-S paths... Combine that with the majority of Adelaide stations being located west of the Lofty Ranges, and fewer flights to utilise, and it is a no-go. However, this particular track should be able to support AE between Melbourne and stations in the clear in Greater Adelaide - VK5AKK, probably, and VK5NY. The track crosses the beam heading between my old QTH in Box Hill South and VK5AKK close to the mid-point of the signal path.

The things to bear in mind are the brevity of the "openings" - exchanges will have to be quick; the number of daily flights (only 6), and that the aircraft really needs to be on your beam heading to the distant station. Plane Plotter would be a great help for those who do not have a ADS-B receiver or range to display the enhancement area. Low local noise floors would be of some assistance! Station ERP greater than VK5VF should ensure better RS reports than those I have recorded from VK5VF.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur VK7MO

This month's report comes from Ian VK3AXH, who gives us some insights into the development of his station and EME operations using WSJT as follows:

Some years ago I was involved with experiments using Hellschrieber, receiving signals via meteor scatter from Rex VK7MO on 6 metres. With the advent of a new digital mode JT44 by Joe Taylor K1JT, these experiments continued on 2 metres. The WSJT digital modes by K1JT are used by EME stations with small antenna arrays and moderate power to take part in weak signal operation via the moon.

My first EME contact took place on 21st of August 2004 using JT44 with W5UN. I used a single 13-el Yagi and AM17 amplifier. Dave W5UN uses 32 Yagis, so you can guess who was doing all the work. After some research into what I could do to improve my station, I visited Des VK3CY and had a look at this 4-Yagi system and results obtained.

It took another 10 months before I was finally up and running with my 4x18 element Yagis on 10 m booms designed by the late DJ9BV and optimised by VE7BQH with all elements insulated. The array is mounted on a Nally Tower and is not fully extended for obvious reasons.

On the receive side, my IC-910 is coupled via a preamp using a ATF54143 designed by PA3BIY. At present it is mounted in the shack, but will hopefully end up on the mast. It is mounted in a weatherproof box with switching, so it is just a matter of relocation. Azimuth and Elevation make use of a CDE Tailtwister rotator and two foot screwjack which gives elevation up to 55 degrees. Manual control is used to track the moon. Elevation readout makes use of the innards from a digital spirit level to give one degree accuracy. I have programmed the steps into the control unit for the screwjack which means if 15 degrees is needed, 15 is pressed on the remote control and the antenna elevates to that elevation position.

An EME logger by N0UK is used to liaise with other EME operators or to see who is calling CQ. Using the WSJT software, if a signal is seen in the waterfall, it is then possible to reply and see if contact can be made. EME can be frustrating particularly when you can

The VX3AXH QSL card featuring his four stacked 18 elelment Yagis

clearly see signals yet when you call them there is no response. Some reasons for this include Faraday Rotation and Spatial Polarisation Offset. In addition, if you have any hiccups with your sequencer, there is a fair chance you will get RF into your preamp and destroy the active device ... I have lost several due to an intermittent PTT line.

There are several stations using single Yagis with moderate power - a couple of hundred watts - on the band and I have been lucky to work a number of them.

The digital mode used for 2 metres is JT65B. This program can also be used for weak signal terrestrial contacts and is in regular use by enthusiasts within VK. Good results are obtained using this mode when there is no chance of having a QSO on either SSB or CW. The site to download the software is at:

http://www.physics.princeton.edu/pulsar/K1JT/

To date I have had 677 QSOs, 223 grids and 45 DXCC. If you are contemplating trying this exciting activity and I can be of any assistance, please get in touch by email at igm@vic.chariot.net.au

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

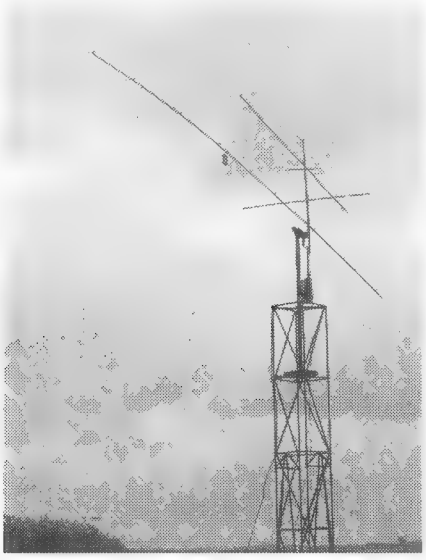
Brian Cleland VK5BC

September was a very quiet month on 6 m without any reports of significant openings, only the odd report of a beacon being heard briefly.

David VK3AUU is certainly preparing for the next sunspot cycle in a big way. He has recently constructed and erected a 16-element Yagi based on the DL6WU design on a 26.3 m boom. Pictured below is the Yagi:

To assist newcomers to 6 m, below is a list of Australian, New Zealand and New Caledonian 6 m beacons that are presently operational and most likely to be heard at this point of the Sunspot cycle.

There may be other beacons either planned or not operating at present and I will advise of any updates. If your equipment has the capabilities, you should program the above frequencies into memories and regularly scan them. It is surprising how often you will find the band opens and you hear a beacon.



The VK3AUU 16-element Yagi for 6 m

It is also useful to listen for Channel 0 TV, in particular, Toowoomba sound on 51.672 and Wagga Wagga sound on 51.740.

The international call frequency is 50.110 MHz and the Australian calling frequency 50.200 MHz with most SSB operation taking place between 50.110 MHz and 50.200 MHz. For more information check the Australian amateur Callbook.

Also do not forget that Standard licensees can only operate in the 52 – 54 MHz portion of the band. There are several Standard licensees who operate in this portion of the band and can be found calling on 52.1 MHz.

Hopefully 6 m will start coming to life during November and lead into another good sporadic E season.

Please send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

Australia				
Frequency	**Callsign**	**Location**	**Grid locator**	**Mode**
50.046	VK8RAS	Alice Springs	PG66wf	CW
50.057	VK7RAE	NW Tasmania	QE38du	CW
50.058	VK4RGG	Gold Coast	QG62qa	CW
50.066	VK6RPH	Perth	OF88aa	CW
50.087	VK4RTL	Townsville	QH30jp	CW
50.288	VK2RHV	Hunter Valley	QF57sc	CW
50.289	VK2RSY	Sydney	QF56mh	CW
50.293	VK3RMV	Wannon	QF02wh	CW
50.297	VK7RST	Hobart	QE37pb	FSK
50.304	VK6RSX	Dampier	OG89ii	CW
50.306	VK6RBU	Bunbury	OF76wr	CW
50.310	VK8VF	Darwin	PH57kn	CW
50.315	VK5RBV	Barossa Vall.	PF95mk	CW
50.345	VK4ABP	Longreach	QG26dn	CW
52.438	VK3FGN	Mildura	QF15ct	CW
52.450	VK5VF	Adelaide	PF95	CW
New Zealand				
50.040	ZL3SIX	Christchurch	RE66ej	CW
50,043	ZL1VHF	Auckland	RF73	CW
51.030	ZL2MBH	Napier	RF80	FSK
52.275	ZL2MHF	Upper Hutt	RE78ns	FSK
52.490	ZL2SIX	Blenheim	RE68	FSK
New Caledonia				
50.080	FK8SIX	Noumea	RG37fr	FSK

AMSAT

Paul Paradigm VK2TXT, email: coordinator@amsat-vk.org

Getting started on the FM birds

Regular readers of AR may recall that in early 2006 I published a feature article entitled "Working AO-51 on a budget". This month I will be revisiting this subject by presenting an updated and slightly shortened version of this article. I feel that it is time to update the information as AO-51's operating procedures have changed, and I also wanted to include details on working SO-50.

Below you will find some basic information which is intended to get those who have never worked via an amateur satellite up and communicating on the FM birds (AO-51 & SO-50) with minimal equipment and little expense.

I acknowledge that the FM satellites only make up a part of the amateur satellite service. However they are the easiest to use and currently the most popular birds. Once you have had a taste of working the FM birds you may decide to broaden your horizons by stepping up to the slightly more complex SSB/linear satellites and the digital modes.

The easiest way to get started is by working the birds portable. You will need to get out of the shack, and into an open area. In most cases, the FM satellites you will be listening to or working will be more than 750 km away, so you will need a clear view to the sky without anything blocking the signal. At times, even light foliage can block the satellite's weak transmissions. It is interesting to note that AO-51 and SO-50 transmit with an approximate power output of from 0.5 to 2 watts.

What kind of antenna do you need?

The bottom line is that any VHF antenna will work for transmission up to the satellite. You can be successful using the rubber ducky which came with your handheld transceiver (HT). However it's a little trickier on the receive side, but again, with some patience and perseverance you can be successful using the simplest of dual band vertical antennas.

A whip antenna, such as a mobile 2 m/70 cm dual band collinear attached to the HT with a short coax lead, works a little better than a rubber ducky. Naturally, the whip will work more effectively if ground plane radials are used. While using a ground plane is great, keep in mind that you will need to be holding the antenna system in one hand while operating your HT in the other. So don't make your ground plane too large or heavy!

As far as the transmit power goes, you

AMSAT-Australia

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Website: www.amsat-vk.org

About AMSAT-Australia

AMSAT-Australia is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites.

Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.

AMSAT-Australia is the primary point of contact for those interested in becoming involved in amateur radio satellite operations.

If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-Australia monthly nets

Australian National Satellite net

The net takes place on the 2nd Tuesday of each month at 8.30 pm eastern time, that is 9.30 Z or 10.30 Z depending on daylight saving.

The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news.

The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP	Maddens Plains repeater on 146.850 MHz
VK2RIS	Saddleback repeater on 146.975 MHz
VK2RBT	Mt Boyne Repeater on 146.675 MHz

In Victoria

VK3JED	Preston, Melbourne on 144.296 MHz SSB simplex
VK3JED	Preston, Melbourne on 439.175 MHz FM simplex with a 91.5 Hz CTCSS tone.
VK3RTL	Laverton, Melbourne, 438.600 MHz FM, - 5 MHz offset

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9509. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email.

AMSAT-Australia HF net

Members and interested parties are also reminded of our HF net which is held on the 2nd Sunday of each month. See www.amsat-vk.org for details.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.

Should you wish to join AMSAT-Australia, details are available on the web site. Membership is free and you will be made very welcome.

will do just fine on as little as 2 watts. In fact, it's best not to use a lot of power – you do not want to stomp on other users you may not be able to hear. Five or 10 watts is heaps, and you certainly do not want to use 20 or 25 watts while holding an antenna in your hand.

If you are really keen, you can start your FM satellite experiments by using a three element Yagi to direct your signal towards the satellite. However, if you are going to have problems, 95% of the time it is going to be on the receive side.

It goes without saying that a handheld dual band antenna or antenna system is a must for working LEO (Low Earth Orbiting) satellites successfully. If you are just getting started in working LEO satellites, I would suggest a 2 m/70 cm dual band mobile collinear antenna with four to eight short radials.

If you are really keen, then you might purchase an "Arrow" handheld satellite antenna. This is a combined 3 element 2 m and a 7 element 70 cm Yagi mounted at 90 degrees with respect to each other. Unfortunately, the Arrow manufacturer does not have a distributor here and will not ship to Australia! So if you want one, you will have to buy one from a dealer in the US that offers international shipping. If you are handy, you may also consider home-brewing an Arrow look-alike or an alternative directional antenna such as the very effective "IOIO" design – see the AMSAT-VK Group files section for details.

Antenna position

While the AO-51 satellite continuously transmits a weak carrier signal, SO-50 does not. I would suggest that you start by trying just to listen to other operators working on AO-51. You will need to move your antenna around to find the best position for your particular location. If you are using an omnidirectional antenna such as a rubber ducky or whip, you will find that it will work best if you direct the tip of the antenna toward the ground at a 45 degree angle. This sounds a bit strange, but it works by maximizing signal strength by utilizing the ground as a reflector. This applies equally to both receive and transmit modes, and you will find that hard surfaces work best. The 45 degree angle also helps a little to match the satellite's antenna polarization.

If you are using a directional antenna, you will want to aim it directly at the satellite. Rotating your Yagi on its Z axis from time-to-time can also be helpful. Do not forget that satellites are stabilized in space by rotating on their Z axis, changing their antenna polarization continuously.

AO-51 and SO-50 frequencies

By now you will have realised that AO-51 and SO-50 use two different amateur bands for reception and transmission. The downlink or receive frequencies for AO-51/SO-50 are 435.300 and 436.795 MHz respectively. The uplink or transmit frequencies are 145.920 and 145.850 MHz. Given this crossband configuration, ideally you should be using a full duplex HT. This will enable you to hear yourself coming back from the satellite. While it is desirable to have a full duplex rig, it is not essential.

If you like, you could use two radios to achieve full duplex operations, though handling two rigs and an antenna might be a bit tricky – it is possible and I have operated portable with two HTs, an "IOIO" antenna and a pair of headphones. With full duplex capabilities, you will know at once that you are getting into the bird, and it will make working SO50 much more straight forward. For the remainder of this column, I am going to assume that you are going to be using a single dual band radio.

Setting up the HT

Before telling you the easiest way to set up your radio to work AO-51 and SO-50, I want to briefly mention the Doppler effect. Being a licensed amateur radio operator, you probably already know about the Doppler effect. To refresh your memory, Doppler makes a transmitted radio signal seem to change frequency as a transmitter moves toward and away from the receiving station, that is, when it is moving at high speed.

Recall that this effect is relative, meaning that it applies to both stations, even if only one station is moving. If both the stations are in motion, this complicates the situation even further!

This effect increases with the frequency of the RF being radiated. In our case, the UHF downlink signals from AO-51 and SO-50 will be effected by Doppler, far more then the VHF uplink transmission. In fact, the VHF signal is not Doppler shifted by all that much, so we will not have to worry about altering the uplink frequency at all.

As far as the UHF downlink is concerned, you will see about a 10 kHz shift above and below the stated transmit frequency, as the satellite traverses the sky from horizon to horizon.

The easiest way to deal with the Doppler shift on a HT or fixed step transceiver is to alter the frequency in 5 kHz steps, by manually lowering your receive VFO frequency as the bird moves toward your station. When the bird is at its closest to you or directly above you, your VFO should be set to the published transmit frequency. You then continue to lower the frequency as the bird continues along its ground-track away from your location.

To make life simpler, I would suggest that you pre-program five or six memory locations in your HT for each bird as the table at the head of the next page.

Before you begin, it is a good idea to disable your HT squelch control. The signals you will hear will often be too weak to break the squelch, unless you are using a very good antenna system. Do not forget to set up the PL Tones when needed and to enable the custom split frequency feature on your rig.

Also, you should know that AO-51's FM repeater is always functioning/turned on according to its operating schedule, while SO-50 is not. In order to operate via SO-50, you or another operator must activate the satellite's repeater function remotely. More on this in a moment.

Once again, I would suggest that you should start with listening to and then working AO-51 as it is used way more than SO-50 in Australia.

When AO-51 appears over the horizon, as determined by your prediction software (see below), you should monitor the satellite on channel 51, and only progress to channel 52 once you lose the carrier or intelligence on the voice signal. As the carrier or voice starts breaking up once more, change to channel 53 - being the actual published transmit frequency of the satellite. It is at this point that AO-51 is at its closest, and hence the signal will be at its strongest.

Finally, continue to channels 54 and 55 when required. This channel changing/ frequency lowering will become second nature with experience.

As mentioned, it is necessary to switch on SO-50 before the repeater can be used. When first getting started with

Memory Location	Memory Label	RX Frequency in MHz	TX Frequency in MHz	PL Tone Frequency
51	AO51-1	435.310	145.920	N/A.
52	AO51-2	435.305	145.920	N/A
53	AO51-3	435.300	145.920	N/A
54	AO51-4	435.295	145.920	N/A.
55	AO51-5	435.290	145.920	N/A.
56	SO50-ON	436.805	145.850	74.4
57	SO50-1	436.805	145.850	67.0
58	SO50-2	436.800	145.850	67.0
59	SO50-3	436.795	145.850	67.0
60	SO50-4	436.790	145.850	67.0
61	SO50-5	736.785	145.850	67.0

SO-50, you can probably just wait for another operator to turn the satellite on.

As you can see from the HT Memory table, SO-50 requires the enabling of PL tones to work. Assuming that you have set up the memories in your radio as per the table, in order to activate the repeater, you will need to transmit a quiet carrier overlaid by a 74.4 Hz tone for a few seconds, by selecting memory channel 56 and holding in your PTT button.

You can then operate via SO-50 in the same manner as AO-51, starting at memory location 57.

Working the bird

Working the FM birds is very similar to working your local repeater, except that its coverage may encompass almost the entire country, and possibly many others such as NZ, PNG, many of the Pacific island nations, and some countries in South East Asia if you are lucky and depending on your location.

Unlike your local repeater, AO-51 and SO-50 QSOs are not equal. There are huge variations in the capabilities of the stations using the satellites. It is so easy to disrupt other users, by dropping carriers on their frequencies or by calling CQ, when you cannot actually hear the bird. Before making a transmission, listen first, and be very, very sure that no other operator is speaking on the satellite.

This is so important when getting started and I have to admit that it is very tempting to transmit when you are not sure whether you can hear the satellite or not. So, if you can only take one thing away from reading this column, it is this…

"If you cannot hear the bird, do not transmit!"

AO-51 in particular is a busy bird and is in use during most passes, so you should not have any difficulty in finding a QSO to listen to or to join. I would only attempt to use SO-50 after you are comfortable with working AO-51.

It is also very important to leave silent gaps between each transmission. When you are having a conversation on a bird, be sure to leave a gap of about 3 seconds before replying to another operator. Because any given pass may only allow communications for five minutes or so, depending on your setup, other operators can be unintentionally left out by people who are too quick on the PTT and are subsequently never heard!

You should also limit the number of times you call CQ and leave long gaps between calls. On many occasions a new operator has unintentionally disrupted an entire pass by continuously calling CQ over the top of other QSOs because they have not been able to hear the satellite.

The only thing that remains to be said about on-air satellite operations is to be courteous.

The birds are there for all to use and you should make room for others to participate on every satellite pass. Sometimes you will have the freedom to have short conversations with other hams around the country and at other times you may only have the chance to exchange callsigns. That is just the way it is with the LEO birds.

When are the FM birds available?

AO-51 and SO-50 operate 24 hours a day. The satellites criss-cross the entire globe in a polar trajectory, taking about 90 minutes to complete a single orbit. In order to operate on any bird, you will need a piece of software to predict each pass of the satellite. You will also need an internet connection to update the satellites telemetry data (KEPS) every week or so.

When working portable you should review the ground-track of each pass before heading outside to get a rough idea of where to expect the satellite to be located in the sky throughout a pass. This will be essential if you are going to be operating via SO-50 using a directional antenna and a half duplex radio.

On my PC I use two programs called Orbitron and SatPC32. Orbitron is a great free program with all the bells and whistles. You can download it from http://www.stoff.pl. I mainly use SatPC32 for controlling my base station radio when working the SSB satellites, though it can be used standalone if you prefer this program over Obitron. SatPC32 is available for download as a fully functional demo from the AMSAT-NA website – www.amsat.org

Many other programs are available for Windows, Mac, Linux, Palm and Pocket PC. I will leave it to you to find alternatives to the ones mentioned.

Finally, you will need to check the operating schedule of AO-51 before attempting to listen to or work the bird. While AO-51 operates in the VHF/UHF crossband repeater configuration most of the time, other modes are frequently in use. See the AO-51 monthly schedule website for details – http://www.amsat.org/amsat-new/echo/ControlTeam.php SO-50, on the other hand does not change modes, being permanently setup as a V/U FM voice repeater.

So, why not give it a try?

Catch you on the birds!

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Contests

Contest Calendar November – December 2008

November	8/9	Japan International DX Contest	SSB
	8/9	Worked All Europe DX Contest	RTTY
	15/16	**Spring VHF/UHF Field Day**	**CW/SSB/FM**
	15/16	JT Ham Radio 50 Contest	CW / SSB
	22/23	ARRL International EME Contest	All
	29/30	CQWW DX Contest	CW
	29/30	CQWW SWL Challenge	CW
December	5/7	ARRL 160 m Contest	CW
	06	RTTY Melee	RTTY
	13/14	ARRL 10 Metres Contest	CW/SSB
	20	OK DX RTTY Contest	RTTY
	26 to 15 Jan 2009	**Ross Hull Memorial VHF Contest (VHF/UHF)**	**CW/SSB/FM**

Welcome to this month's Contest Column!

Phil Smeaton VK4BAA

CQWW RTTY – CQ Scandinavia!

An opportunity missed this year. I wanted to try a single band effort on 40 m to test a new antenna, and managed to pack the car and drive to the contest QTH – but left the laptop behind!

With no other means of participating in the RTTY contest (I have yet to master the art of decoding Baudot by ear), I had to settle for the Scandinavian contest instead. The antenna is a full size quarter wave vertical and is intended as a 'DX' antenna. Hence, nearby stations were but a warble in the noise whilst signals from further afield were clearly audible.

I had recently resurrected my trusty old FL-2100 amplifier and I wanted to see how it fared on-air. A few QSOs around VK resulted, in addition to working a handful of northern hemisphere stations too as part of the Scandinavian contest. Well, it seems like the antenna is doing a good job at least.

The EU stations were all workable after a call or two and the band got a little crowded at 4 pm local time with EU stations. The RTTY stations were in full swing and the spread of stations up the band to 7070 kHz put a few noses out of joint – but it is only once or twice a year that the RTTY boys spread their wings to this extent, so live and let live I say.

CQWW RTTY occurs the last weekend in September and it is an excellent chance to test out antennas, radios, amps and other station changes made over the winter. It is also an excellent way to learn, or brush up on, SO2R or other logging program features since you do not have to concentrate as much on copying the exchanges and calls. You can pay attention to the computer and the mechanics of your operating rather than worrying about making mistakes.

I tend to look at RTTY contesting a lot like CW contesting, but quieter. While it is useful to listen to the received signal to make timing exchanges go smoother, you do not have to listen to most of the QRM and other noise, you are just listening for the other guy to stop transmitting so you can start.

Also, with modern loggers and more contesters realising that RTTY is gaining popularity, the pace of RTTY contesting is picking up. It was not long ago that a typical exchange was repeated several times, extra 'hello' and 'thanks' was added which tended to slow down the exchange but to little detrimental effect. Most operators have worked out that rates well over 100/hr are very possible if you cut out the chat and use exchanges like in CW contests with just a few simple modifications.

It does not take lots of extra hardware to get into RTTY contesting. If you are using a logger like N1MM and have hooked up your sound card as a voice keyer you are likely just one cable away from RTTY operating. If you already have the computer playing audio to the radio, all you need is to get the radio audio to the computer. With many radios, that can just be a single off the shelf cable from the line-out on the back of the radio to the sound card line-in. This lets you use the radio in SSB and send/receive AFSK.

This approach also presents you with some interesting technical operating capabilities. With a single sound card it is possible to do SO2R and be decoding two bands at once and not lose a beat decoding the second radio while transmitting on the first. With two sound cards, or two computers with one card each, you can decode both VFOs on two

radios at once, so you can both CQ and S&P on two bands at once!

As most RTTY contests have no 160 m operation, which might be interesting if you have antenna changes there to test, at least you do not have to worry about the end of summer noise quite as much. This also means for M/S or M/2 entries you can spend more time on the productive 80 m and 40 m night time bands.

So keep in mind that the CQWW series of contests actually starts in September and not October. Just hook up those sound cards and get on the air.

Waitakere Sprints 2008 Results - VKs

SSB Only	
VK5NJ	64
VK4FW	59
VK2LCD	55
VK3HJ	49
VK4ZD	49
VK2RD	43
VK4VCH	43
VK4ATH	36
VK3ZPF	22
VK2FAJM	16
VK4FJ1	4
VK3BTV	13
VK3KTM	3
CW Only	
VK3OZ	20
VK3QB	18
VK3JS	7
VK6AF	5
SSB & CW	
VK4SN	142
VK8AV	60

Bless him Father, for he has Sinned

With the SSB section of the Oceania DX Contest still ringing in my ears, here is the story from my entry into the foray at VK4KW.

The station currently consists of antenna hardware for only two bands – 40 m and 80 m. The 40 m system was fabricated some weeks ago, but on the morning of the contest, the 80 m system was yet to be built.

The usual bunch of culprits could not attend site to help with the assembly etc, but one hardy soul confirmed that he could come and do the business. It is just as well really, as he is the antenna building brains! So, with tomorrow's arrangements made and confirmed, peace descended on the VK4BAA household on Friday evening with a glass of something splendid rapidly disappearing.

Saturday arrived - but the hardy soul did not! He was due early on the Saturday morning but he was a no-show! I already had 40 m erected and ready to go, so I knew that at least one band could be tested in the contest.

So, just in case of a late arrival instead of a complete no-show, I set-to in the paddock to clear the area around the planned location for the 80 m antenna. Some larger bits of log/tree/stone had been cleared previously, but there was more wood in the way and a huge amount of foliage to clear. The farmer next door often takes a break to watch what the crazy Pom is up to – and he was not disappointed.

As my slasher was in the shop for repair, I used my sit-on mower to clear the area around the support structure. All the farmer could see was some plump bloke astride a mechanical dust maker three sizes too small for the rider, hurtling round and round in a paddock under the hot midday sun and creating ever decreasing circles in the undergrowth. Every revolution, I could see the farmer leaning on his ute, howling with laughter.

Two hours (and a huge amount of dust) later, the general area was clear enough to accommodate the radials for a 1/4 wave vertical on 80 m. Like many other mad dogs, I had been out in the midday sun for far too long and needed to re-hydrate.

I made my way back to the house to find two missed calls on the mobile phone - the hardy soul seems to be trying to make contact! A quick return phone call later, the additional pair of hands arrived after having been stuck in traffic due to an air show at Amberley having got in the way. After the usual greetings and banter, we got to work with putting the station on to 80 m.

We assembled the 80 m antenna fairly quickly as it had been pre-prepared into a range of cut pieces of aluminium poles. We soon got the ropes tied on and erected it. It looked huge standing at the bottom of the pole, looking up: nineteen metres of splendour reaching into the sky. It certainly looked impressive – the antenna guru had done a good job! We then laid the seemingly never-ending box full of radials out on the ground. The time was now just after 4 pm and the contest was due to start at 6 pm local time. After a quick test for resonance and bandwidth with the MFJ, all seemed to be good to go.

Next job was to get the feeder system installed - a further one hour job consisting of clambering across paddocks, up and down trees, avoiding startled kangaroos and highly aggressive ants, as well as generally tripping-over stuff as we were both getting physically tired by now. On the way back to the house, I turned and looked at the new antenna. It now looked small in size!

Back at the shack, I assembled the radio, laptop, table, chair, headphones and temporary power (the shack is separate to the house and is not completed as yet). The PC then spat the dummy and N1MM refused to talk to the rig. Changing bands was now very much a manual affair and possibly fraught with potential for error - especially at two or three in the morning. Luckily, we got away with it.

I got onto 40 m only a couple of minutes late for the start of the contest and soon put a few QSOs into the log. I later found that the first QSO, 001, was 'eaten' by N1MM - heaven knows what happened to it, but I later managed to get the data back into the log. The logger also, at times, refused to return to RX after a transmission. As the CAT linkage was dead, I un-plugged all other rig/PC connection and strangely this cured the problem - it did not seem to be RF related. Analysis over, the damn thing works!

40 m seemed to go OK, but 80 m started burbling a little bit so a quick QSY and listen around on 80 m for a while. With hindsight, maybe we should have stayed on 40 m a little bit longer, but you live and learn! A few other VKs were already there on 80 m, some CQing and getting no replies and others working a handful of NA stations. A quick "CQ" and a few more into the log, then back to 40 m.

What is this? The 'helping hand' wants to have a go? Not a problem says I - just use a different callsign such as VK4BAA

and..... no! Stop! You worked him using VK4KW! Bugger! Now we are Multi Single and not Single Op!!! Oh well, time to have a chat with Mr Boag.....

Conditions on the bands were not wonderful in general in VK4 but it was good to see how the antenna systems were performing. They seemed to get a few mults into the log so they can't be too far off the mark. There are a number of improvements required and these have been noted for next year! Some antenna hardware for at least 20 m and 15 m would be good too; as the vast majority of Sunday was spent working very little indeed on 40 m, as 80 m was obviously closed. A trip to 20 m would have helped the score hugely I reckon - and 15 m sometimes opens to JA for a while also, as it did in 2007. Things might be a little bit different for 2009!

So, what about the 'sinning' mentioned within the title? Well, apparently, all contesters are doing it all wrong. This is according to one individual that insisted on venting his spleen on the Sunday morning of the contest during my CQing on 40 m.

"What's your name and where are you?" he asked. I responded initially, thinking that the voice had come from the station I had just worked. "That's better" he said. "That's a bit weird" I thought to myself, and carried on CQing for the next contact. A VK2 answered and we dutifully exchanged our information in a prompt and efficient manner. Then it came again: "What's your name and where are you?" I ignored him this time and carried-on the business of contesting. He persisted: "It's common courtesy to say your name and QTH – you contesters do not know the meaning of a QSO. A radio amateur is courteous at all times" he hissed, no doubt missing the uninvited irony embedded in the situation he had just created.

So, I asked; "What's your call?" No reply. I asked a second time. Again, no reply. "You're transmitting illegally if you do not identify yourself" says I.

Still no reply. "Good" I thought – "He has given up and QSYd". But, it was not to be. He continued with his solitary diatribe a few minutes later, extolling the virtues of QSO information almost to the level of exchanging birth certificate details and DNA. However, my antenna is biased towards DX and not really intended for VK QSOs in general, so when the band opened to EU his signal soon got swamped by a wall of noise from foreign lands.

This was in addition to the filtering that I had brought into action – unbeknown to him. His squeals and squawks went unheeded and he apparently soon tired of solitaire contesting and shuffled away to play 'Contest Police' with someone else. I heard him later on, chastising another contest participant in a similar manner. The recipient laughed at the unwanted interruption and carried-on with enjoying his hobby – much to the annoyance of the interloper.

Amateur Radio is a broad church with something for everyone and I welcome all comers. However, when there is deliberate jamming and illegal unidentified transmissions it is a sad day for us all as it does not portray us in a good light.

But it would seem that VK is not alone in breeding 'Contest Police'. Did anybody else receive such a warning before CQ WW, or is it just Yuri VE3DZ? Yuri received an anonymous email stating: "Please be aware that I will be monitoring you 48 hours on the bands from W1 area with an SDR Time machine. You better not have two signals on the air at the same time, or do other dirty tricks. Be sure you will be caught and evidence will follow to CQWW CC." Someone sure has got a good sense of humour!

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via vk4baa@wia.org.au. See you on the bands.

73 de VK4BAA Phil Smeaton.

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2008 RD Contest

Peter Harding VK4OD

The contest is over and all the logs are in. Having checked them all, I am able to present the winners with their Certificates.

I received a total of 300 logs compared to 312 last year, with the overall points totalling 36,144 compared to last year's total of 45,926. Last year we received 19 logs from Foundation calls, this year it dropped to 16. No logs received from ZL this year, and only one log for the receiving only section.

I believe that we can attribute the slight drop due to the Lighthouse Event and the RD falling on the same weekend, unfortunately from time to time this is going to occur. Thankfully this year, 54% of the logs were created electronically, the remainder were either hand written or on pre-designed forms that I made available. This made my task a lot easier and enabled a quick finalisation of results.

Once again, quite a few of this year's entrants were from club stations running multiple operators, multi modes and multi bands. It is no surprise that VK6 once again will get their name engraved on the RD Trophy as the winning state for 2008.

Well done to all those who took the time and effort to enter the contest and also posted or emailed in their logs. This year I did not have to return any late logs. Should there be any dispute, please email your question to me Peter Harding (vk4od@wia.org.au) and I will do my best to answer your query. Within your email activate the flag for when the message was read by me.

Until next year.

Peter HardingVK4OD
RD Contest manager.

Results

On completion of a reconciliation of all 2008 RD logs, here are the results shown on facing page. We received a total of 310 logs; most were emailed, the remainder Australia Post.

Breakdown:

310 logs from within VK.
1 log from SWL.
0 logs from ZL.
0 logs from P29.
Leading state was VK6 (again).

2008 RD Contest
Top Individual stations by Section.

Place	Callsign	Points	Division
1st	VK7ZE	1002	HF Single Op Phone
1st	VK2GR	340	HF Single Op CW
1st	VK7GN	835	HF Single Op Open
1st	VK6ABM	75	HF Single RX Only
1st	VK2WIA	1376	HF Multi Op Phone
1st	VK4IZ/2	162	HF Multi Op CW
1st	VK2AWA	1527	HF Multi Op Open
1st	VK6USB	518	VHF Single Op Phone
1st	VK3GDM	50	VHF Single Op CW
1st	VK6BDO	491	VHF Single Op Open
1st	VK6ANC	242	VHF Multi Op Phone
1st	VK6RRG	137	VHF Multi Op Open

HF Multi Op CW

Callsign	Pts claimed
VK4IZ/2	162
VK4EV	22

HF Multi Op Open

Callsign	Pts claimed
VK2AWA	1527
VK6ANC	562
VK2BV	202
VK2BOR	182
VK4IZ/2	176
VK5ZSN	138
VK2TS	122

HF Multi Op Phone

Callsign	Pts claimed
VK2WIA	1376
VK8DA	217
VK5SR	200
VK2AHV	80
VK7ZGK	38
VK6CNL	32
VK4WIT	23
VK6COM	6

HF Single Op CW

Callsign	Pts claimed
VK2GR	340
VK5ATU	224
VK3QB	210
VK2AWD	160
VK5SW	150
VK3YB	144
VK6AFW	120
VK2AVQ	62
VK6GW	42
VK3KS	40
VK4XJ	34
VK2RJ	30
VK3TX	24
VK5HO	18

HF Single Op Open

Callsign	Pts claimed
VK7GN	835
VK7GZ	421
VK1WX	215
VK7KC	183
VK4AAT	178
VK2ENG	173
VK2BAM	160
VK3DET	124
VK4ADC	118
VK3HAU	106
VK3BMK	78
VK7TW	77
VK3FNBL	73
VK2GWK	72
VK1DA	56
VK5ZFW	50
VK2YW	48
VK5ATQ	48
VK1XYZ	41
VK6SO	33
VK4AQD	32
VK4YNG	30
VK5KDK	22
VK5OQ	22
VK5HCF	19
VK4DB	13
VK4FK	12
VK7NGC	10
VK6ZPM	8

HF Single Op Phone

Callsign	Pts claimed
VK7ZE	1002
VK2XN	829
VK4ZD	742
VK4VCH	522
VK5SN	445
VK3HJ	428
VK4VDX	406
VK1PAR	394
VK3LDR	385
VK1YBQ	304
VK3FSTU	280
VK4FABC	248
VK2LCD	241
VK2FEDS	227
VK7YBY	211
VK7IF	194
VK3KTO	187
VK6HAM	183
VK7WPX	180
VK3AHY	168
VK3BKO	161
VK3YXC	157
VK6AAL	156
VK3KAL	150
VK4BAY	149
VK6CG	149
VK6JEE	147
VK5YX	140
VK4TRX	139
VK3FIGG	137
VK4JRO	134
VK2RD	130
VK5WO	129
VK5ZDB	125
VK7VH	125
VK2ZCM	121
VK5KOB	120
VK5RV	114
VK7BEN	112
VK3KCD	111
VK6FDX	103
VK6ZAK	102
VK6ZMS	93
VK5KBJ	92
VK3AMW	90
VK2AFY	86
VK4FLR	86
VK6ADI	82
VK6CSW	81
VK7RM	80
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VK3ERS	11
VK1ZCM	10
VK5AEY	10
VK5ZQ	10
VK6FAVB	10
VK4FNQA	9
VK6DAT	5
VK6HWF	4
VK2XT	3
VK6ARG	2
VK6BMW	2
VK6TVI	2

HF Single RX Only

Callsign	Pts claimed
VK6ABM	75

VHF Multi Op Open

Callsign	Pts claimed
VK6RRG	137
VK6SAA	137
VK6SCS	137
VK6VF	137
VK6FIVE	136
VK6WH	136
VK5ZSN	56

VHF Multi OP Phone

Callsign	Pts claimed
VK6ANC	242
VK6ARG	133
VK6COM	74
VK4WIT	1

VHF Single CW

Callsign	Pts claimed
VK3GDM	50
VK6ARO	4
VK6CRO	4
VK6RO	4
VK6SIX	4

VHF Single Open

Callsign	Pts claimed
VK6BDO	491
VK7ZBX	324
VK6WIE	269
VK6JB	229
VK4ADC	184
VK4ZBV	175
VK7TW	131
VK1DA	32
VK5KDK	29
VK5SE	29
VK1WX	27
VK4AAT	24
VK1RG	22
VK1BP	21
VK1HS	21
VK5FRCE	21
VK7RG/1	21
VK6ZPM	19
VK6PMY	17

VHF Single Phone

Callsign	Pts claimed
VK6USB	518
VK6TWO	469
VK6ZAR	433
VK6PIG	420
VK6FDX	414
VK7HDM	341
VK6CSW	318
VK6KHZ	285
VKAAML	229
VK6VCG	207
VK6JP	203
VK7RR	190
VK6YOY	181
VK6FJA	174
VK6KAD	168
VK6SH	164
VK6WIA	162
VK6MM	160
VK6GHZ	154
VK6TVI	150
VK6ZLZ	145
VK6AAL	143
VK6OTN	142
VK7XOR	127
VK7ZGK	127
VK6BMW	125
VK6GDO	113
VK6DAT	111
VK5KBJ	109
VK6KMC	107
VK6RO	106
VK6ARO	101
VK6ZIC	100
VK6SIX	98
VK6CRO	97
VK7BEN	83
VK6AB	74
VK4ZA	73
VK6AR	72
VK2LCD	68
VK5AR/M	68
VK1DW	67
VK2AFY	60
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VK6LZ	53
VK6JEE	49
VK6YF	49
VK5ZKK	44
VK5FD	43
VK5RV	42
VK6SN	37
VK4EV	35
VK5NE	35
VK3JK	32
VK6KG	30
VK6DK	29
VK4GLC	28
VK6GO	28
VK6KY	28
VK1KMA	26
VK3XJU	26
VK7RM	25
VK4JAZ	23
VK5AMK	23
VK6YGQ	23
VK6HWF	22
VK5NI	16
VK6ALU	16
VK6AAO	15
VK4FNQ	12
VK6OE	12
VK7KK	12
VK7FDKM	11
VK3JWT	10
VK7VH	10
VK1EY	9
VK4PJ	7
VK5AVQ	5
VK6RO	5
VK2ZCM	4
VK2JA	3
VK5EMI	2
VK3FTJH/6	1
VK6GL	1
VK6SO	1

ar

DX - News & views

John Bazley VK4OQ
P.O. Box 7665, Toowoomba Mail Centre, QLD 4352. E-Mail --- john.bazley@bigpond.com

The days of planning a DXpedition on a 'shoestring' appear to have disappeared if one studies the inventories of equipment being shipped these days to activate a wanted entity. The other side of the coin is that there is a better chance of having a contact with numerous operators and bands being activated continuously over several days. Skill is still needed at both ends of a contact, particularly an understanding of propagation and at the DXpedition side, pile-up control. Two forthcoming events are below.

From VK9WDX – Willis Island.

"All our preparations are entering the final stages. 1.4 tons of equipment is on its way and due to arrive in Australia on the "*MS Ute Oltmann*" shortly. This is a big multi-operator DXpedition."

JA8BMK's Pacific trip, which is expected to begin in October. Toshi JA8BMK will depart Sapporo, Japan on September 30th heading for Fiji (3D2) and then on to Western Kiribati, planning to arrive there on October 2nd.

Ships depart to Central Kiribati (T31) every 30 to 45 days, so, while waiting, Toshi will be QRV from T30 "for an unknown period". Toshi has already shipped a Yaesu VLA-1000, TL-933, three generators, Yagi antenna, vertical antenna, tent and Toyota Van to T30.

He will hand carry extra equipment including an IC-7000, FT-897D, and HL-1.2KFX (Tokyo High Power). Look for him to be QRV on SSB, CW, RTTY, PSK31 and SSTV. He will concentrate on the European and USA openings for the low bands, as well as 12, 17 and 30 meters. He may try to activate C21 and T33. Due to the shipping schedules to Central Kiribati, Toshi may end up on the island for two to three months. Donations to assist in this long DXpedition will be appreciated. QSL via JA8UWT.

Yuri VE3DZ will be in Suriname between November 25th and December 1st. He will be operating as PZ5TT, including in the CQ WW CW DX Contest. Outside of the contest he will be on CW, SSB and RTTY on all bands. QSL via VE3DZ.

3X5A The VooDoo Contest Group will enter the CQ World-Wide CW contest on November 29th to the 30th from Conakry, Guinea, as 3X5A, multi-multi category.

This will be the group's 15th straight year in multi-multi from West Africa and their 20th straight year participating in CQWWCW. In the 2007 contest 3X5A won this category, first place world, their 6th outright win. This is their second visit to 3X5A,with their usual eight or nine British and American operators, seven one-kW stations and a dozen antennas.

They will also be active as 3X5A (no personal call-signs) before the contest, including WARC bands and maybe some RTTY. QSL manager: G3SXW, direct (qrz.com) or e-mail to g3sxw@btinternet.com for a bureau reply, or paper QSL via bureau; also LoTW. No QSLing rules: just normal practice. More information at: http://voodoocontestgroup.com/

Italian operators Silvano I2YSB, Vinicio IK2CIO, Angelo IK2CKR, Marcello IK2DIA and Stefano IK2HKT will be operating from Sierra Leone between January 25th and February 13th 2009 from Sherbro Island (AF-056). The team will use 9L1X. However each of the team members has their own individual calls (9L1M, 9L1X, 9L1A, 9L1K and 9L1E). Plans are to have three complete stations with amplifiers.

Suggested frequencies:

CW: 1823, 3505, 7005, 10105, 14025, 18080, 21025, 24895 and 28025

SSB: 1840, 3795, 7050, 14260, 18130, 21295, 24925 and 28450

RTTY: 14082.

The 9L1X Website can be found at http://tinyurl.com/6zd7h7 QSL 9L1X via I2YSB.

Roland F8EN will be back to Libreville, Gabon from mid-Dec. 2008 to mid-Jan 2009. He will operate as TR50R (until 31st Dec 2008) and TR8CR (from 1st Jan.2009). QSL both via F6AJA.

Philippe F4EGS (TT8PK) is working two months in Dushanbe, Tajikistan (EY). He already has his licence. Plans are to begin October 1st. Watch for him in his spare time on 7 through 28 MHz. Philippe will be running 100 watts into an R7 vertical. Activity is expected on SSB, RTTY, PSK and CW.

He has more travel plans for 2009. They include Abidjan, Ivory Coast as TU/F4EGS in January/February; Mauritius and Rodrigues as 3B8/F4EGS and 3B9/F4EGS in March; back to Chad as TT8PK in May-July; and from Djerba Island (AF-083), Tunisia possibly as 3V8SM. QSL per operator's instructions.

Charles "Frosty" Frost K5LBU is working on a 2009 DXpedition to Lesotho (7P). He is seeking operators for the team between July 29th and August 12th. Email to frosty1@pdq.net

Paul A35RK will be active as KH8/KK6H from American Samoa from December 5th to 9th. He will be QRV in his spare time on CW and SSB on "whatever band is open". Paul will look for openings to Europe. Working the Americas should be fairly easy in his daylight hours. QSL via W7TSQ or LoTW.

Andrew Munson VK4HAM announced plans for a 2009 DXpedition to Effate Island (NA-035), Vanuatu. He will be operating as YJ0AAC from March 25th to April 1st, 2009, including the CQWW WPX SSB Contest. Andrew will be QRV on 3.5 to 28 MHz. QSL via VK4HAM.

Vincent F4BKV is in Hong Kong until September 2009 and will be QRV as VR2/F4BKV from Hong Kong Island (AS-006). From a 22nd floor in Wan Chai district he is using an FT-857D with 100 watts and random wires. Mostly PSK31 with some SSB.

Nadir ST2NH is again QRV on the Amateur Radio satellites. Email him for a sked at st2nh@yahoo.com. His web page is: http://www.sudanham.bizland.com/st2nh%20folder/st2nhome.htm

Vasily UA0QMN has been in Vila Catoca, Angola, since September 24, QRV as D2QMN. He is only active on 20 CW and SSB with an IC-7000 and delta loop six metres off the ground. Weekdays from 1700 Z,weekends 1000 to 2300 Z.

Bud Trench AA3B goes to Antigua's V26K Nov. 26th to Dec 1st for the CQWW CW. Bud will be single op all band low power. QSL via AA3B.

N8SHZ will be in Mexico operating Oct. 16th to Nov. 22nd with wires on top of a hotel, using an FT-100D and tuner. He will be active on 80, 40 and 17, "holiday style," a couple of hours a day.

LZ9W, the Bulgaria Contest Team, will

Continued at foot of facing page

Silent Keys

Basil Adrian Thornton VK2EQY

Born 4th March 1911 and passed on11th August 2008,Basil died at the age of 97. He served in the RAAF during WW2 and was discharged with the rank of Warrant Officer. He spent most of his Air Force time in Sunderland Flying Boats shepherding Liberty ships across the Atlantic bound for England and Murmansk.

Basil used coded Morse code on an Aldis Lamp to send the position of German U-boats to Allied warships. Often his aircraft returned to its Irish base, almost out of fuel, and many emergency landings were made on closer Scottish lochs.

It was Basil's knowledge and use of "Morse" which, afterwards in his married life, led him to become an amateur. He lived for many years with his wife Helen in Ermington. He was a service and maintenance engineer working at the Australian Gaslight Company at its Mortlake works. This also helped him to develop a multi–antenna system at his home. He enjoyed using HF, speaking to amateurs in other parts of the world.

There are four highlights in Basil's radio life. He helped save a Canadian logger's life when he realized the man had collapsed at the microphone in the forest cabin. He called for help, assistance was forthcoming and the man survived. Basil used to enjoy entertaining children by lighting a fluorescent light tube held at the end of his 80 m dipole when he transmitted. There were squeals of delight!

Basil had a love of young people. He had contact with Scout troops all over Sydney and the Blue Mountains on JOTA weekends. He spent much time telling boys about radio and encouraged them to become interested in the hobby. He also really enjoyed being driven to "the Vets" once a month at the WIA Parramatta. Here he would talk with friends, look at the old radios, enjoy reading books from the library and having lunch with fellow amateurs.

In his later life Basil lived in Lourdes Retirement Village with his portable 2 m vertical antenna on his balcony and speak on 2 m repeaters to friends from his lounge room. This he enjoyed immensely, but he missed his HF contacts. Basil died in Lourdes Hospital. He will be greatly missed by his friends.

Basil is survived by his wife, Helen, and three sons.

Submitted by John Stacy VK2JJS.

Howard Vincent Booth VK2AMD, G2AS

May 2008 saw the end of an epic journey through life as a radio amateur. Born in Sheffield England, 6th of March 1908, sadly Howard had only a short time to enjoy his century. He recently broke his hip in a fall at his home. Following an apparently successful hip replacement, he passed away on Sunday 25th of May

Howard had a lifelong interest in amateur radio. He sat and passed his Morse code exam (20 wpm) on 26th January 1923 at just 14 years old. He obtained his first licence some 3 years later with the callsign G2AS. This he held until his last day. As G2AS in the UK, he helped form the Sheffield Amateur Radio Club in the early 1920s.

Howard and his family emigrated to Wollongong NSW in May 1948. Not being one to wait for "Somebody else", Howard immediately became involved in local amateur radio. By June 1948 the "Wollongong Amateur Radio Club" was formed with Howard as founding President. Within a month test transmissions commenced with a transmitter built by Howard, costing 'about ten bob' for parts.

In September 1948 Howard received his Australian licence with the callsign VK2AMD. Always one to help and encourage, many Wollongong locals, who are now 'old timers' hold fond memories of Howard as their mentor and amateur radio 'Father figure'.

Howard continued his enthusiastic support of the hobby even if he did slow down a little as the years progressed. He was well known on 2 metres in the days before FM repeaters, also a keen 20 metre operator. This band he used to maintain ongoing contact with G4SVU and the late G3EQF of Mansfield Notts. Many Sheffield and South Yorkshire operators would join in.

Aside from amateur radio Howard had been very much involved in the sport of weightlifting since his teens and won championships back in England. Advancing years did not change him, he conducted weightlifting classes until well into his eighties and regularly exercised with weights when 90.

On the family scene, Howard had lived alone for the past 19 years since the death of his wife Billie. His is survived by a sister in England and two sons in Australia, with grand and great grand children.

Though we all may be saddened by his passing, his friends all over Australia and the UK, can say that they knew AN OUTSTANDING AMATEUR!
Vale Howard VK2AMD G2AS

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DX *continued from page 52*

be on for the CQWW CW, multi- multi. QSL via LZ1PM. http://www.lz9w.com/index.php

Special thanks to the authors of The Daily DX (W3UR), 425 DX News (I1JQJ) and QRZ.DX for information in this months DX News & Views.

You can obtain from W3UR a free two week trial of The Daily DX from www.dailydx.com/order.htm

Happy DXing. ar

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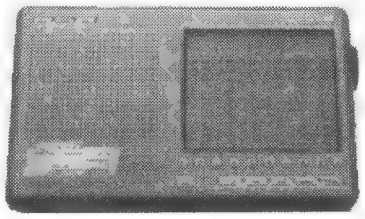

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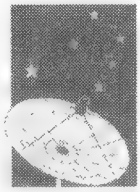

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Tim Roberts VK4YEH QTHR.

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KENWOOD TR-751A 2 m mobile multimode transceiver, very good condition, comes with mobile bracket and hand mike. Price $350. Broad band POWER AMPLIFIER, KL-400 by RM ITALY. 3-21 MHz range. 2-20 W input, 120-400 W output. Price $270. Tom VK2OEwojiech. tomczyk@education.nsw.gov.au 3 Buller St. Bonalbo NSW 2469 (11)

From the estate of John Ryan VK2FO (SK) YAESU FT-1000MP S/N SL350106 – immaculate condition – new cost $4495. "Rolls Royce" of HF transceivers, inbuilt auto ATU, pwrsupply, Collins mechanical filter. MHJ-31BB hand mic. Original packing and manual. $1500. YAESU FT-736R S/N 61060035 50-144-430 MHz all modes – immaculate condition, cost new $3000 original packing and manual, MH-1B8 hand mic. $1000. YAESU VX-1R S/N 9E220826 – Tiny dual band hand held – good working order, one damaged knob. AC charger, copied manual, $150 REVEX W500 SWR/PWR meter 1.6 – 525 MHz, as new $50 ONO YAESU MD-100A8X desk mic good condition, original packing and manual, ideal for FT-1000MP. $100. YAESU MD-1C8 desk mic Good condition, original packing – ideal for FT-736R. $100. COAX CABLE RG-213 50 ohms, mil spec. Current DSE price is $3.45 per metre. 100 metres on spool, never unwound. $200. LOW PASS FILTER Model 150, rated 1 kW, 50 ohms, SO-239 connectors, $10. COAX SWITCH 3-way, SO0239 connectors $10. MORSE PADDLE iambic, made by Galbraith in ZL, collector's item $20. Stan Bourke VK2EL QTHR, phone (02) 4233 2783 sbourke2@bigpond.com (11)

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WANTED NSW

AR8 RECEIVER AND POWER SUPPLY Nick L20106 (02) 9477 2134 (11)

My YAESU FT-767GX transceiver will not transmit. I suspect that the finals have blown. Is there any qualified technician that may be able help? Please contact me: 02 6343 1469. Graham. (10)

COLLINS 312B-4 station control unit, preferably in good operating and physical condition. If you have one not being used and are prepared to part with it, please contact me. Steve VK2XWL; email steve.b@internode.on.net Phone QTH 02 4952 5443 of mobile on 0412194513. (10)

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PHILLIPS FM RADIOPHONE TYPE 1677CY. This FM Base station has the following valve line-up in the transmitter. 12AT7, QQE 02/5, QQE 02/5, QQV06-40A. Receiver is the solid-state receiver section from a FM1680C. An attached paper tag says that it was on 166.54 MHz. I can email a photo if required. Offers to Roderick Wall email:vk3yc@wia.org.au or 0413 074386. (10)

WANTED VIC

I am looking for a GENERAL RADIO GR 1931A MODULATION MONITOR. Thanks. John Eggington,VK3EGG. Mob: 0409 234 672 Email:vk3egg@optusnet.com.au (11)

Any information on ADMIRALTY PATTERN 2189 TRANSMITTER Q4 as to use and vintage. Information required by a local historical group Len VK3AQJ QTHR 03 9762 3522 (11)

OUTPUT TRANSFORMER A&R type 4000-8 Drew VK3XU QTHR (03) 9722 1620 (11)

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Broadcast details

VK1	VK1WIA:	Sunday 0900 local on the Mt Ginini repeaters 146.950 and 438.050 MHz. The UHF repeater requires 123 Hz access tone and is linked to the Goulburn repeater.
VK2	VK2WI:	Sunday 1000 and 1930 local, on 1.845, 3.595, 7.146, 10.125, 14.170, 28.320, 52.525, 145.6000, 147,000, 438.525 and 1273.500 MHz. Also 5.425 MHz USB in the morning.. Plus provincial relays both sessions and country relays in the morning via local repeaters. VK1WIA news is included in the morning.
VK3	VK1WIA:	Sunday 10:30 am and 8 pm Local Time. Amateur Radio Victoria VK3BWI B/cast Network: 3.615, 7.158, 10.130,147.250 VK3RMM Mt Macedon, 146.700 VK3RML Mt Dandenong, 147.225 VK3RWG Mt Baw Baw, 438.075 VK3RMU Mt St Leonard.
VK4	VK1WIA:	Sunday 0900 local via HF and major VHF/UHF repeaters.
VK5	VK5WI:	Sunday 0900 local, on 1.843, 3.550, 7.140, 28.470, 53.100 AM, 146.900 (SE), 146.925 (CN), 147.000 and 439.975
VK6	VK6WIA:	Sunday 0900 local, on 1.865, 3.582, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120, 50.150, 146.700 and 438.525 MHz. Country relays on 3.582 MHz and major repeaters. Repeated Sunday, 1900 local, on 1.865, 3.565, 146.700 and 438.525 MHz. Country relays on major repeaters. Also in 'Realaudio' format from the VK6WIA website.
VK7	VK7WI:	Sunday 0900 local, on 1.840 AM and 3.570 MHz and on major repeaters. VK7 regional news follows at 0930 local, on 7.090 and 14.130 MHZ, and on major repeaters.
VK8		Sunday 0900 local, on 3.555, 7.050, 10.130 and 146.900 MHz.

Note that many clubs broadcast the WIA News via local VHF and UHF repeaters. Check the News section of the WIA website.

Waverley ARS at Australia's oldest lighthouse

Laurie Gordon VK2GZ

Operating situation at Macquarie Lighthouse. The flagpole holds up two dipole antennas.

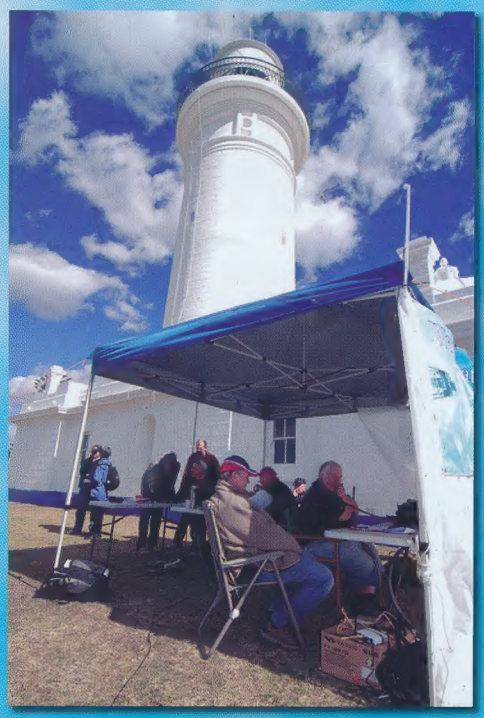
Waverley Amateur Radio Society activated the historic Macquarie Lighthouse for the sixth year in succession during the International Lighthouse/ Lightship weekend. Macquarie is the oldest lighthouse in Australia, the site having been used to signal the entrance to Sydney Harbour continuously since 1791 - three years after the arrival of the First Fleet.

The lighthouse is situated on the cliff tops of Vaucluse and is a few kilometres from the WARS clubrooms at Rose Bay. The club's operation included erecting a lashed-timber flagpole to serve as an anchor point for 40 m, 30 m and 20 m dipoles.

There is generally a roll-up of about 20 club members during the day, not to mention numerous visitors. The lighthouse is a popular tourist attraction and favourite backdrop for wedding photographers!

In 2009 as part of the club's 90th Anniversary activities, members are planning to activate the three lighthouses in Sydney's eastern Suburbs - Macquarie, Hornby Light at South Head and Endeavour Light on Botany Bay. A special QSL card is being designed to mark the event.

Above: WARS members operating 20 and 40 metres overlooking the Pacific at Vaucluse. VK2VEC is on the FT857.



Right: VK2TUI transmitting on the IC-706MKIIG with VK2CEC.

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